

LBT-A77CD/A77CDM/D709CD/D759CD

SERVICE MANUAL

These systems are composed of following models.
As for the service manual, it is issued for each component model, then, please refer to it.

COMPONENT MODEL NAME FOR LBT-A77CD/ A77CDM/D709CD/D759CD

System Component	LBT-A77CD	LBT-A77CDM	LBT-D709CD	LBT-D759CD
Tuner	ST-D709		ST-D709	
Power-Amplifier	TA-A77N		TA-D709N	
Pre-Amplifier	TA-A77E		TA-D709E	
Cassette deck	TC-D709		TC-D709	
Record player	—		—	PS-D707P
CD player	CDP-M43	CDP-C422M	CDP-M43 or CDP-C422M	CDP-C422M

AEP Model

LBT-D709CD

UK Model

LBT-D759CD

E Model

LBT-A77CD/A77CDM

Australian Model

LBT-A77CDM

Tourist Model

LBT-A77CD

STEREO COMPONENT SYSTEM
SONY®

PARTS LIST

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- Abbreviations
G : German
IT : Italian
EE : East European
AUS : Australian
EA : Saudi Arabia
JE : Tourist
MY : Malaysia
SP : Singapore

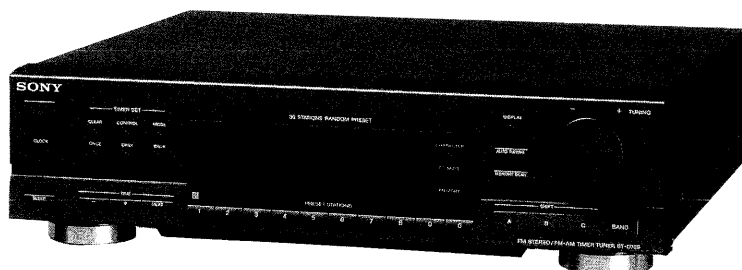
Ref. No.	Part No.	Description	Remark
		ACCESSORIES & PACKING MATERIALS *****	
	1-467-099-11	REMOTE COMMANDER (RM-S709)	
	1-501-369-11	ANTENNA (AEP, UK, EE, IT)	
	1-501-374-11	ANTENNA, LOOP	
	1-558-271-11	CORD, CONNECTION (UK, E, AUS, EA, JE, MY, SP)	
	1-590-823-11	CORD, (WITH CONNECTOR) (3P-15P-15P)	
	1-590-850-11	CORD, (WITH CONNECTOR) (3P-3P-3P)	
	1-690-727-11	CORD (SPEAKER) (LBT-A77CD/A77CDM)	
	1-751-179-11	CORD, (WITH CONNECTOR) (3P-15P-15P)	
	1-751-180-11	CORD, (WITH CONNECTOR) (11P-11P)	
	* 3-350-154-01	CUSHION (for TC-D709)	
	3-703-710-41	STICKER, SONY SYMBOL (12) (for TA-A77N, TA-D709N)	
	* 3-704-350-01	SHEET (STANDARD) PROTECTION (for TC-D709)	
	3-754-847-11	MANUAL, INSTRUCTION (English, French, Spanish, Portuguese) (for CDP-C422M)	
	3-757-124-11	MANUAL, INSTRUCTION (English) (UK)	
	3-757-124-41	MANUAL, INSTRUCTION (English, French, Spanish, Portuguese) (AEP)	
	3-757-124-51	MANUAL, INSTRUCTION (German, Dutch, Swedish, Italian) (AEP, G, IT)	

Ref. No.	Part No.	Description	Remark
	3-757-124-61	MANUAL, INSTRUCTION (English, German, Polish) (EE)	
	3-757-124-71	MANUAL, INSTRUCTION (English, French, Spanish, Chinese) (E, AUS, EA, JE, MY, SP)	
	4-920-940-01	SHEET (A), PROTECTION (for ST-D709, CDP-M43)	
	* 4-929-563-01	CUSHION (for ST-D709, CDP-M43)	
	* 4-934-859-01	CUSHION (for TA-A77E/A77N/D709E/D709N)	
	* 4-944-749-01	CUSHION (FRONT) (for PS-D707P)	
	* 4-944-750-01	CUSHION (REAR) (for PS-D707P)	
	* 4-952-208-21	INDIVIDUAL CARTON (for ST-D709) (LBT-D709CD)	
	4-956-911-01	LID, SLIDE (for RM-S709)	
	* 4-958-814-01	CUSHION (FRONT) (for CDP-C422M)	
	* 4-958-815-01	CUSHION (REAR) (for CDP-C422M)	
	* 4-959-645-01	INDIVIDUAL CARTON (LBT-D759CD)	
	* 4-959-646-01	INDIVIDUAL CARTON (ST-D709, TA-D709E, TA-D709N, TC-D709) (LBT-D709CD)	
	* 4-959-647-01	INDIVIDUAL CARTON (TA-D709E, TA-D709N, TC-D709) (LBT-D709CD)	
	* 4-959-648-01	INDIVIDUAL CARTON (LBT-A77CDM:E)	
	* 4-959-649-01	INDIVIDUAL CARTON (LBT-A77CDM:AUS)	
	* 4-959-650-01	INDIVIDUAL CARTON (LBT-A77CD)	

ST-D709

SERVICE MANUAL

*AEP Model
UK Model
E Model
Australian Model
Tourist Model*



This set is the tuner section in
LBT-A57CD/A57CDM/A67CD/A67CDM/A77CD/A77CDM
/D509CD/D559CD/D609CD/D709CD/D759CD.

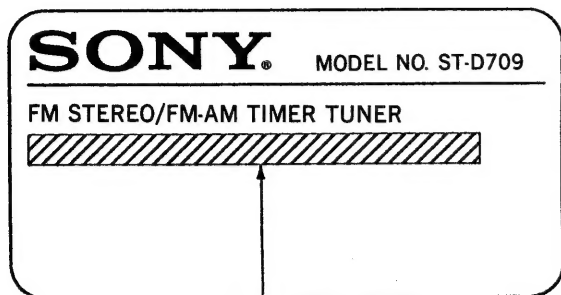
SPECIFICATIONS

System	FM stereo FM/AM superheterodyne tuner	Power consumption	AEP, G, IT, EE model 11W UK, E, AUS, EA, MY, SP, JE model 10W
FM tuner section		AC outlet	2 switched, total 450W max.
Tuning range	except for EE model 87.5 to 108 MHz EE model FM1: 65 to 74MHz FM2: 87.5 to 108MHz	Weight	Approx. 2.7kg (6 lbs)
Antenna	75 ohms unbalanced 300Ω balanced (E, AUS, EA, MY, SP, JE)	Dimensions	AEP, G, IT, EE model Approx. 355×95×330mm (14×3 ³ / ₄ ×12 ⁷ / ₈ inches) (w/h/d, including projections)
Intermediate frequency	10.7 MHz		UK, E, AUS, EA, MY, SP, JE model Approx. 355×95×340mm (14×3 ³ / ₄ ×13 ¹ / ₄ inches (w/h/d, including proejctions)
AM tuner section			
Tuning range	AEP, UK, G, IT, EE model MW: 522 to 1,611kHz (IT) 531 to 1,602kHz (AEP, UK, G, EE) LW: 153 to 279kHz (AEP, UK, EE) E, AUS, EA, MY, SP, JE model AM: 531 to 1,602kHz (at 9kHz interval) 530 to 1,700kHz (at 10kHz interval)	Design and specifications are subject to change without notice.	
Antenna	AM loop antenna External antenna terminal	• G : German model • IT : Italian model • EE : East European model • AUS: Australian model • EA : Saudi Arabia model • MY : Malaysia model • SP : Singapore model • JE : Tourist model	
Intermediate frequency	450 kHz		
Power requirements	AEP, G, IT, EE model 220—230V AC, 50/60Hz UK model 240V AC, 50/60Hz E, AUS, EA, MY, SP, JE model 120V/220V—240V AC, adjustable with the voltage selector, 50/60Hz		

FM STEREO/FM-AM TIMER TUNER
SONY®

MODEL IDENTIFICATION

—Model Number Portion—





AEP, G, IT EE model : AC: 220V—230V~50/60Hz 11W
 UK model : AC: 240V~50/60Hz
 E, AUS, EA, MY, SP, JE model: AC: 120V/220V—240V~50/60Hz

- G : German model
- IT : Italian model
- EE : East European model
- AUS: Australian model
- EA : Saudi Arabia model
- MY : Malaysia model
- SP : Singapore model
- JE : Tourist model

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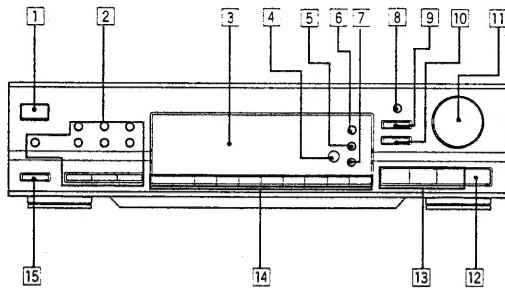
SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK  OR DOTTED LINE WITH MARK  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SECTION 1 GENERAL

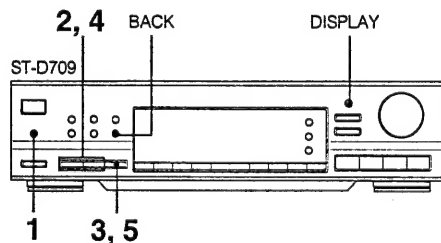
This section is extracted from instruction manual.

1-1. LOCATION OF CONTROLS



- 1 SYSTEM POWER switch
- 2 Buttons for setting the clock and timer
- 3 Display window
- 4 Remote sensor
- 5 ST/MUTE button
- 6 CHARACTER button
- 7 MEMORY button
- 8 DISPLAY button
- 9 AUTO TUNING button
- 10 MEMORY SCAN button
- 11 TUNING knob
- 12 BAND selector
- 13 SHIFT buttons (A, B, C)
- 14 Numeric buttons
- 15 SLEEP button

1-2. SETTING THE CLOCK



The built-in clock shows the time in the display. Set the clock correctly to enjoy timer-activated features (pages 112 and 114).

The time is shown in the 24-hour system.

1 Press the CLOCK button.

2 Set the hour with the TIME – or + button.

3 Press the NEXT button.

4 Set the minute with the TIME – or + button.

5 Press the NEXT button.
The built-in clock starts operating.

To make corrections

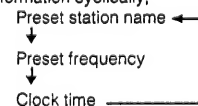
The indication which is blinking can be altered. To make the hour indication blink, press the BACK button.

To reset the clock

Repeat the procedure above.

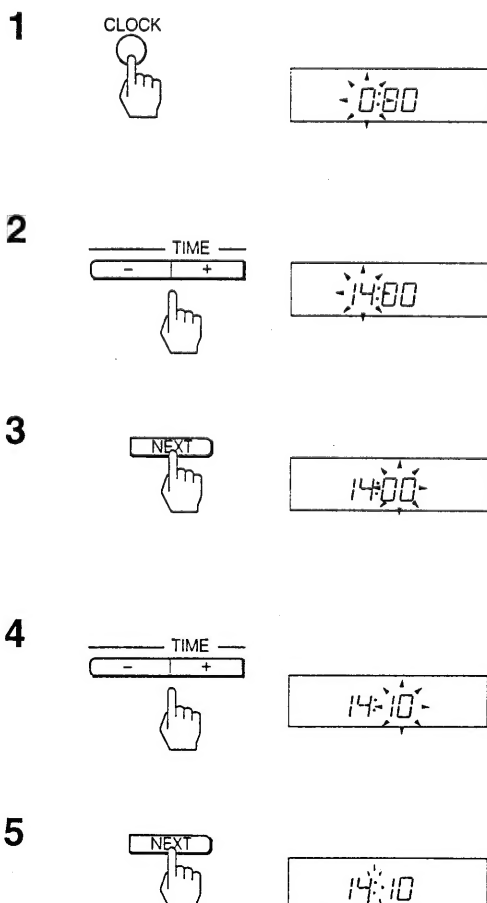
To switch among the clock time, preset station name and preset frequency display

Each time you press the DISPLAY button, the display changes to give you following information cyclically;



If a power failure occurs

The clock will start running again after the power is supplied. However, since the clock will not run during the power failure, it may be necessary to reset it.



SECTION 2 ELECTRICAL ADJUSTMENTS

Precautions in Repairing

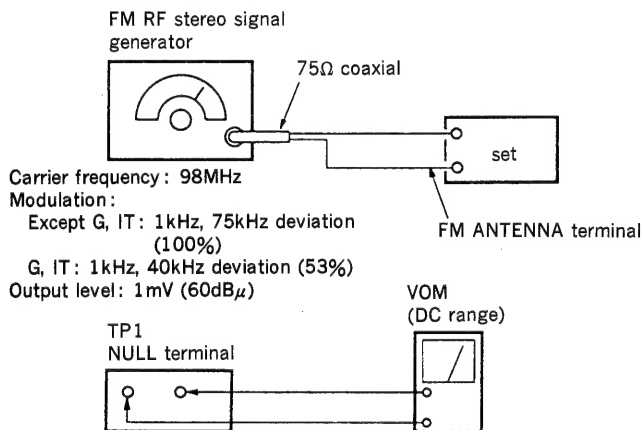
If the front end unit fails, it is difficult to repair the inner circuits, so replace the entire front end unit.

FM SECTION

FM Discriminator Adjustment (NULL Adjustment)

Setting :

BAND switch : FM



Procedure :

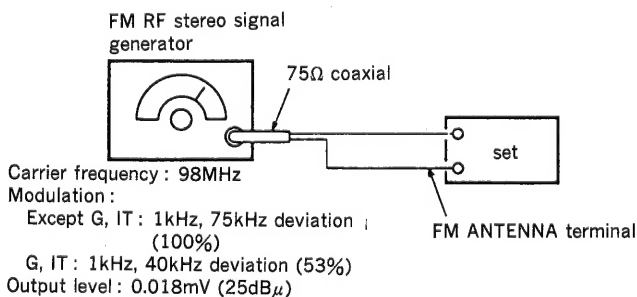
1. Tune the set to 98MHz.
2. Adjust T21 for 0V reading on the VOM.

Note : FM Tuning Level adjustment should be made after FM discriminator alignment.

FM Tuning Level Adjustment

Setting :

BAND switch : FM



Procedure :

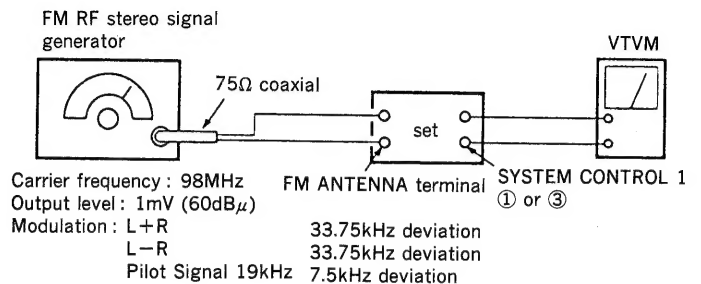
1. Tune the set to 98MHz.
2. Adjust RV24 so that the TUNED indicator goes on.

- G : German model
- IT : Italian model

FM Stereo Separation Adjustment

Setting :

BAND switch : FM



Procedure :

Tune the set to 98MHz.

FM stereo Signal generator Output channel	VTVM connection	VTVM reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ Adjust RV21 for minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjust RV21 for minimum reading.

L-CH Stereo separation : Ⓐ—Ⓑ

R-CH Stereo separation : Ⓒ—Ⓓ

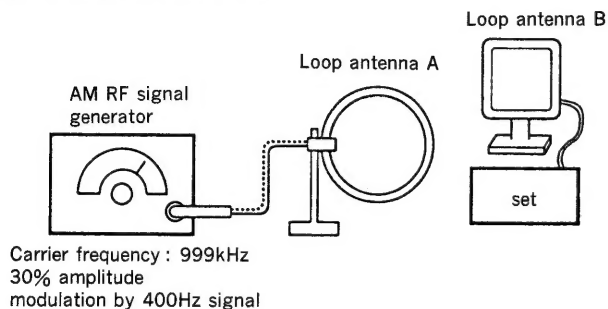
The separations of both channels should be equal.

AM SECTION

AM Tuning Level Adjustment

Setting :

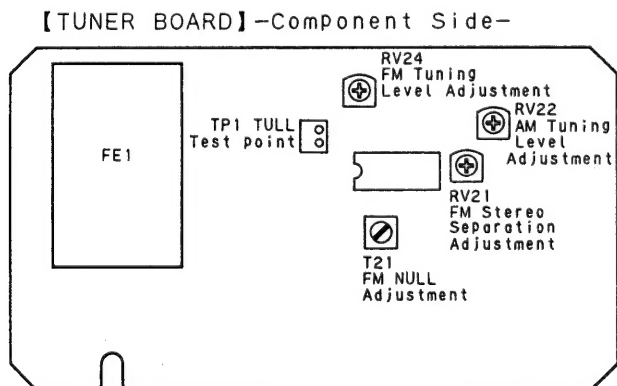
BAND switch : AM or MW



Procedure :

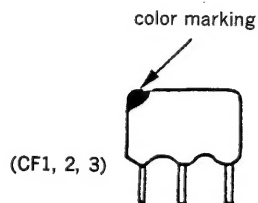
1. Set loop antenna A so that the loop antenna B input level becomes $58\text{dB}\mu/\text{m}$ ($0.8\text{mV}/\text{m}$)
2. Tune the set to 999kHz.
3. Adjust the RV22 so that the TUNED indicator goes on.

Adjustment Location :



Note on Ceramic Filter (CF1, 2, 3) Replacement

This set employs three ceramic filters (CF1, 2, 3) which should have the same color marking to identify their center frequency. Therefore FM IF offset adjustment by D609, D610 mounted is necessary to match the center frequency of the ceramic filters used with FM intermediate frequency.



(CF3: G, IT model only)

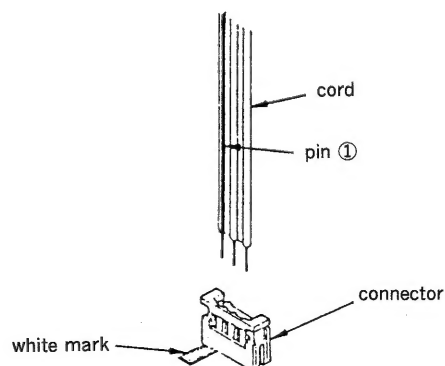
○ : Mounted
× : not Mounted

Ceramic filter		Mount		FM intermediate frequency (MHz)
Color mark	Center frequency (MHz)	* A D610	* B D609	
White	10.750	×	○	10.750
Red	10.700	○	○	10.700
Black	10.650	○	×	10.650

FM intermediate frequency is determined by the three types as shown above. Ceramic filters of same center frequency, i. e., of same color coding should be used for CF1, CF2 and CF3. When replacing the ceramic filters, perform the FM Discriminator Adjustment.

[Note on Inserting the Cord to the Connector on Tuner Board]

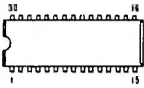
- Insert the cord to the connector fitting Pin ① of the cord in accordance with the white mark on the board at the connector as shown in the figure.



SECTION 3
DIAGRAMS

3-1. SEMICONDUCTOR LEAD LAYOUTS

LA1851N

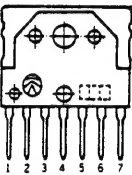


(TOP VIEW)

DTA114ES
DTC114ES
DTC124ES
2SC2603-EF
2SC2669-OY



LA5667

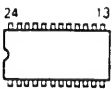


2SA1175-HFE
2SC2785-HFE
2SC3113-AB

letter side



LC7218

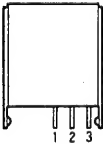


(TOP VIEW)

2SB1116A-L



SBX1610-59

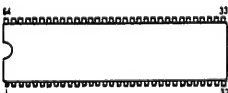


1. VCC
2. VOUT
3. GND

2SK246-GR3

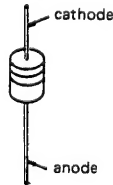


TMP47C1270AN-
H211

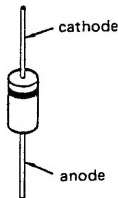


(TOPVIEW)

HZS30-2L



UZP-5.6B
1N4148M
10E2N



• Semiconductor Location
TUNER BOARD
E, AUS, EA MY,SP, JE model

TUNER BOARD
AEP, UK, EE model

COMON

Ref. No.	Location
D21	D-8
D22	D-8
D23	D-8
D24	D-8
IC21	D-6
IC81	B-4
Q1	C-4
Q2	C-5
Q21	C-7
Q22	C-7
Q23	C-5
Q24	C-5
Q26	E-7
Q27	D-8
Q28	D-8
Q81	C-5
Q82	C-5
Q83	B-3
Q84	B-2

Ref. No.	Location
D21	D-17
D22	D-17
D23	D-17
D24	D-17
D61	D-14
IC21	D-15
IC81	B-13
Q1	C-13
Q2	C-13
Q21	C-16
Q22	C-16
Q23	C-14
Q24	C-14
Q26	E-16
Q27	C-17
Q28	D-17
Q61	D-13
Q62	D-3
Q63	E-13
Q64	D-13
Q65	D-14
Q66	D-13
Q81	C-14
Q82	C-14
Q83	B-12
Q84	B-11
Q85	C-11
Q86	C-11

Ref. No.	Location
D601	H-14
D602	I-14
D603	I-19
D604	I-14
D605	H-20
D606	H-20
D607	H-20
D608	H-20
D609	I-20
D610	I-20
D611	I-18
D612	H-20
D613	H-20
D614	H-20
D615	H-20
D616	J-18
D617	J-18
D618	J-18
D619	H-18
D621	H-18
D701	E-25
D801	C-24
D802	B-23
D803	B-23
D804	B-21
D805	A-21
D806	B-22
D807	B-23
IC601	I-16
IC602	H-19
IC801	C-26
Q601	I-19
Q701	E-26
Q801	D-25
Q802	C-24
Q803	B-23

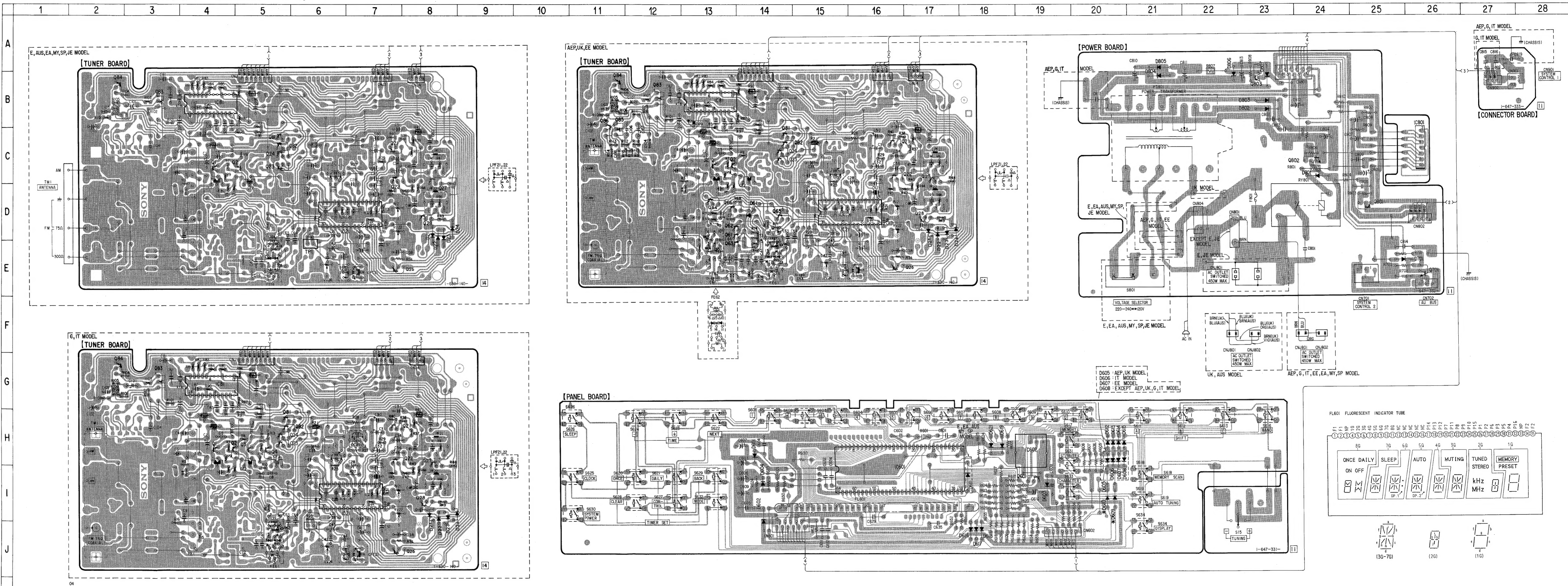
TUNER BOARD
G, IT model

Ref. No.	Location
D21	I-8
D22	I-8
D23	I-8
D24	I-8
IC21	I-6
IC81	G-4
Q1	H-4
Q2	H-4
Q3	H-5
Q4	H-5
Q21	H-7
Q22	H-7
Q23	H-5
Q24	H-5
Q26	J-7
Q27	H-8
Q28	I-8
Q81	H-5
Q82	H-5
Q83	G-3
Q84	G-2

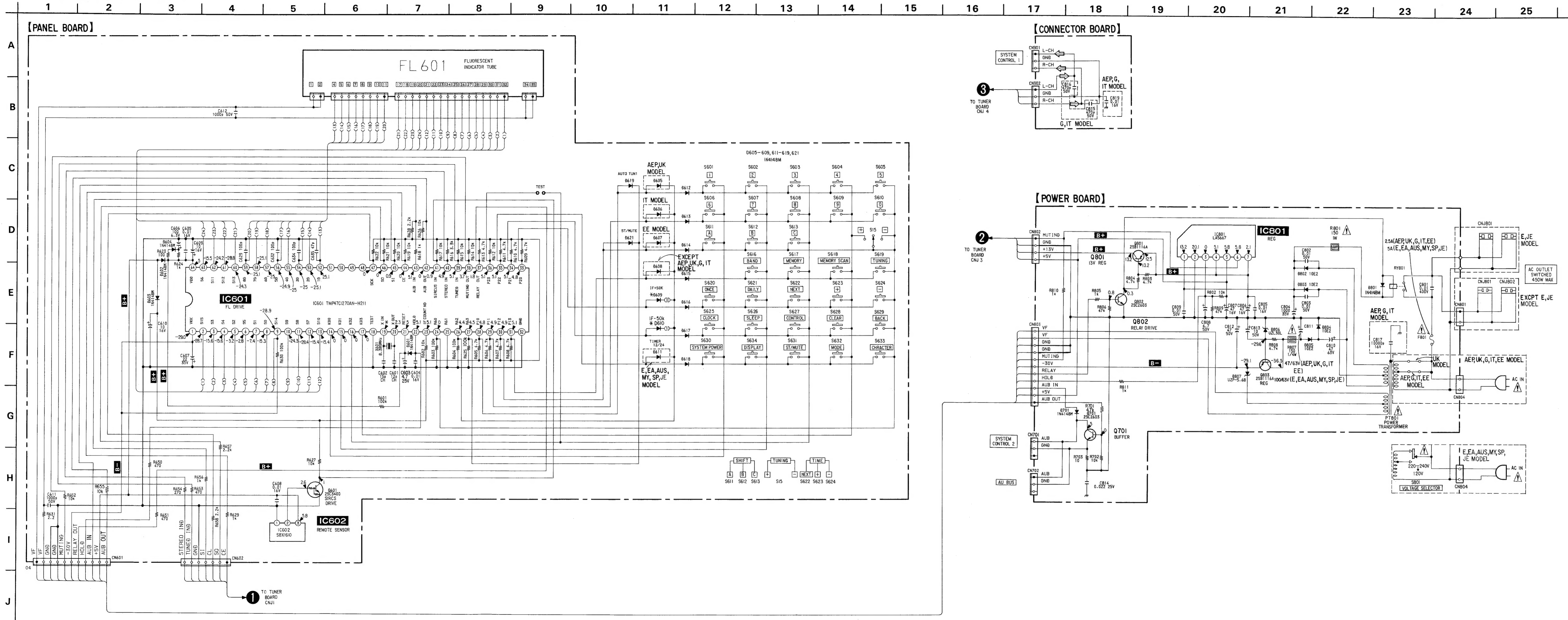
Note:

- : parts extracted from the component side.
- : parts extracted from the conductor side.
- G : German model
- IT : Italian model
- EE : East European model
- AUS : Australian model
- EA : Saudi Arabia model
- MY : Malaysia model
- SP : Singapore model
- JE : Tourist model

3-2. PRINTED WIRING BOARDS • Refer to page 6 for Semiconductor Lead Layouts.



3-3. SCHEMATIC DIAGRAM—PANEL SECTION—



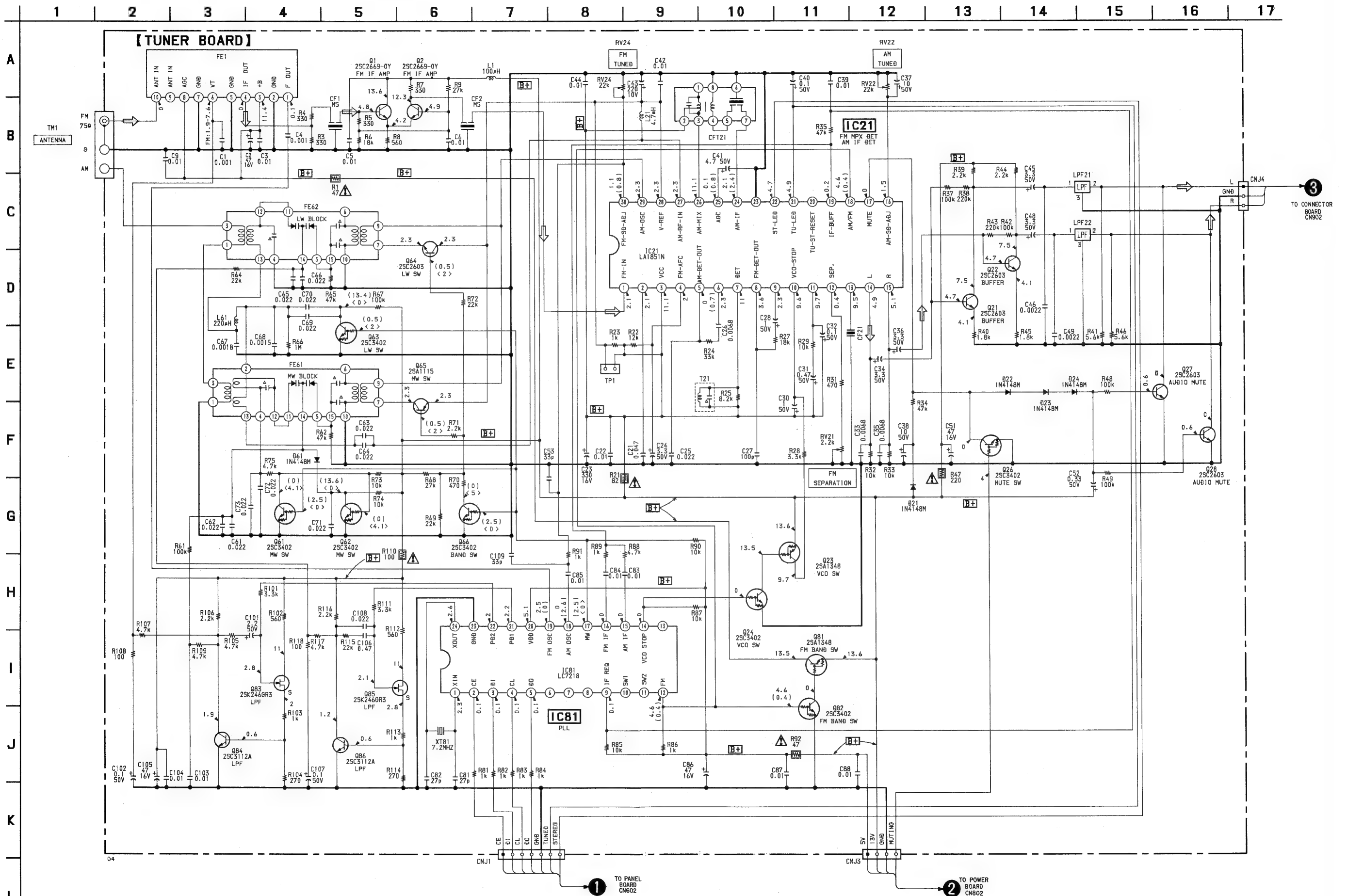
Note:

- All capacitors are in μF unless otherwise noted. pF : μF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}\text{W}$ or less unless otherwise specified.
- \square : nonflammable resistor.

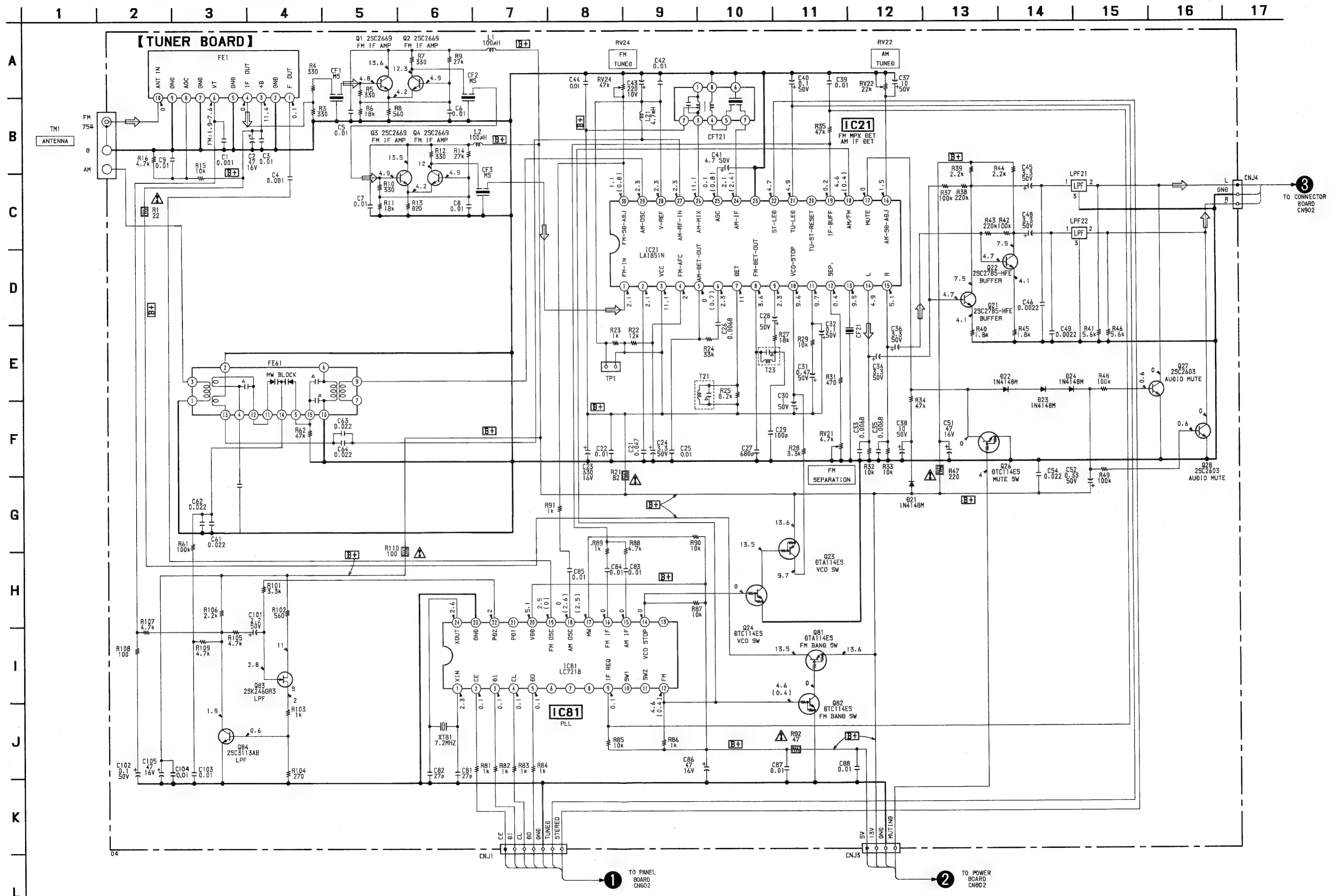
Note: The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- Voltages are taken with a VOM (Input Impedance $10\text{M}\Omega$). Voltage variations may be noted due to normal production tolerances.
- Signal path.
- G : German model
- IT : Italian model
- EE : East European model
- AUS : Australian model
- EA : Saudi Arabia model
- MY : Malaysia model
- SP : Singapore model
- JE : Tourist model

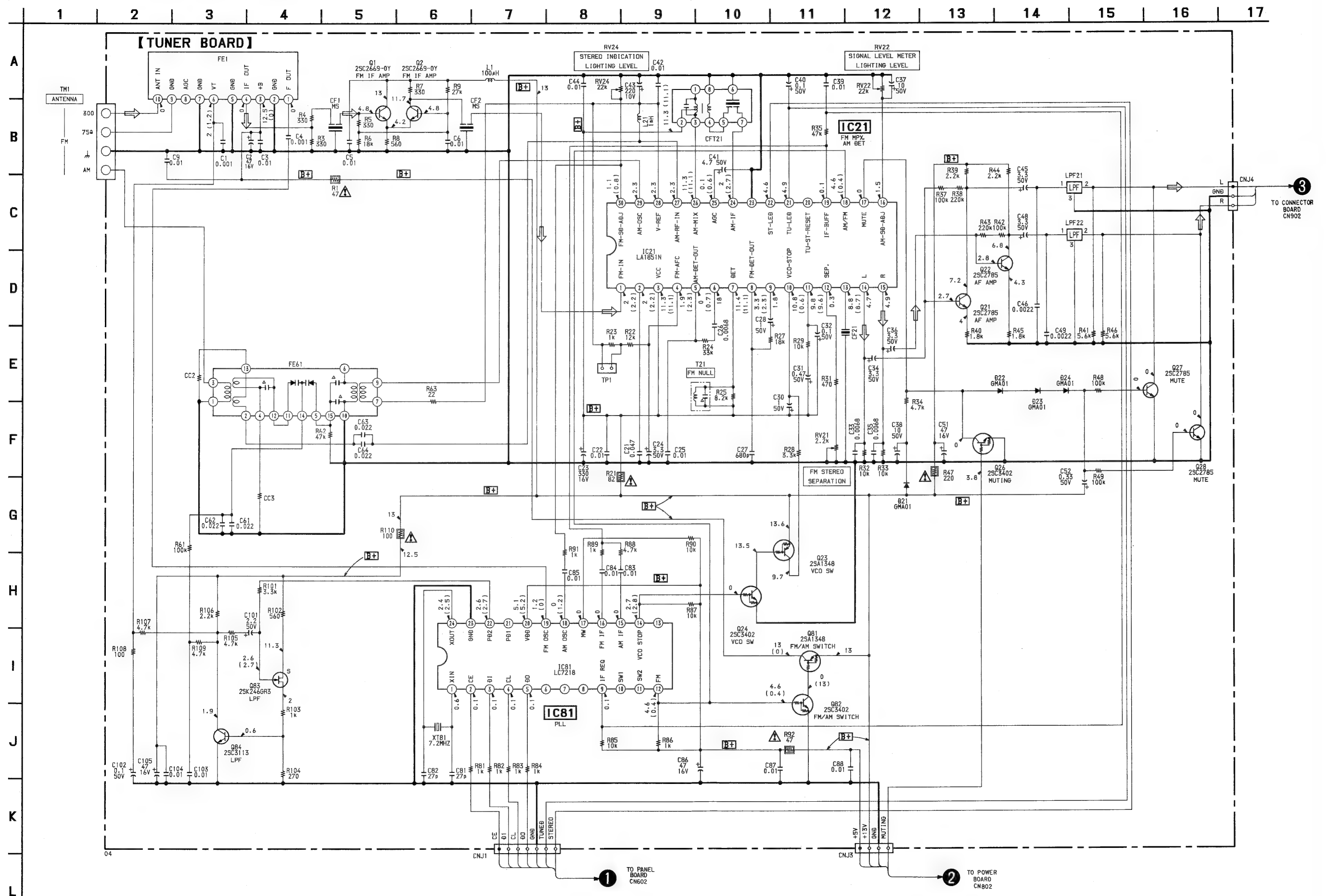
3-4. SCHEMATIC DIAGRAM—TUNER SECTION (AEP, UK, EE model)— • Refer to page 21 for IC Block Diagrams and Note.



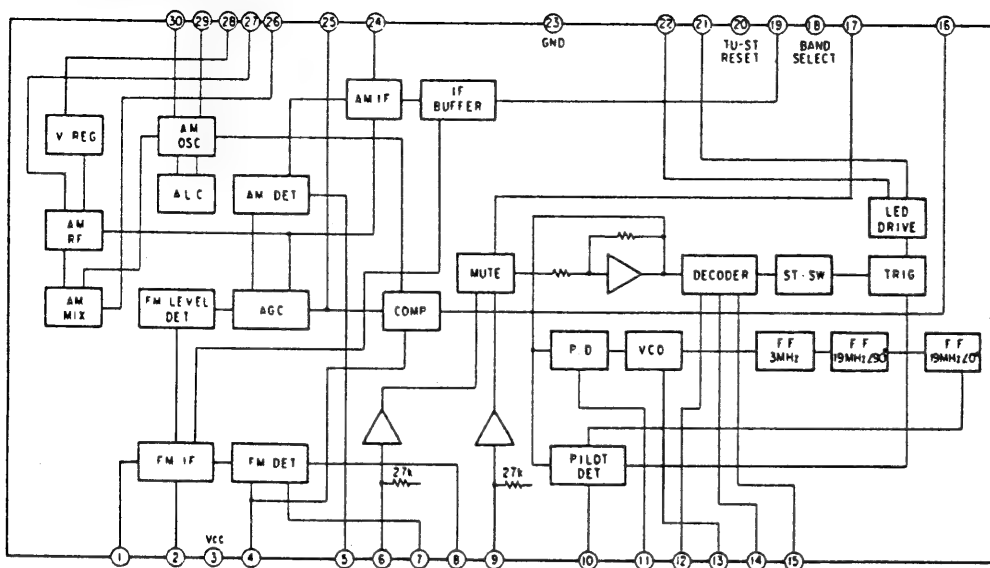
3-5. SCHEMATIC DIAGRAM—TUNER SECTION (G, IT model)— • Refer to page 21 for IC Block Diagrams and Note.



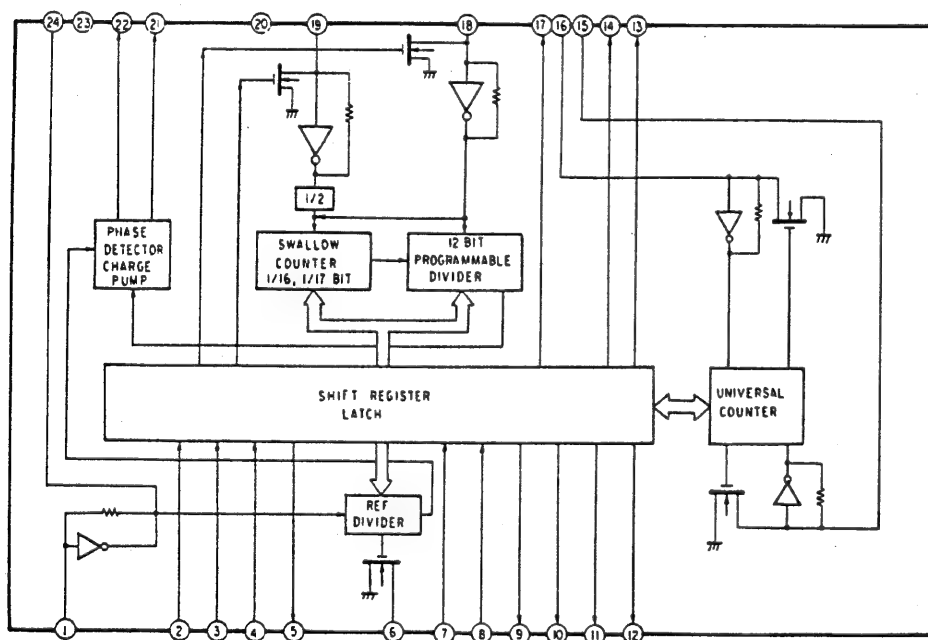
3-6. SCHEMATIC DIAGRAM—TUNER SECTION (E, AUS, EA, MY, SP, JE model)— • Refer to page 21 for IC Block Diagrams and Note.



● IC Block Diagrams
IC21 LA1851N



IC81 LC7218



Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. pF : μF 50V or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}\text{W}$ or less unless otherwise specified.
- \triangle : internal component.
- \square : nonflammable resistor.

Note: The components identified by mark \triangle or dotted line with mark \triangle are critical for safety. Replace only with part number specified.

- \square : adjustment for repair.

- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.

no mark : FM

() : AM or MW

< > : LW

- Voltages are taken with a VOM (Input Impedance $10\text{M}\Omega$). Voltage variations may be noted due to normal production tolerances.

- Signal path.

\Rightarrow : FM

- G : German model
- IT : Italian model
- EE : East European model
- AUS : Australian model
- EA : Saudi Arabia model
- MY : Malaysia model
- SP : Singapore model
- JE : Tourist model

SECTION 4 EXPLODED VIEW

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- -XX and -X mean standardized parts, so they may have some difference from the original one.

- Color Indication of Appearance Parts

Example :

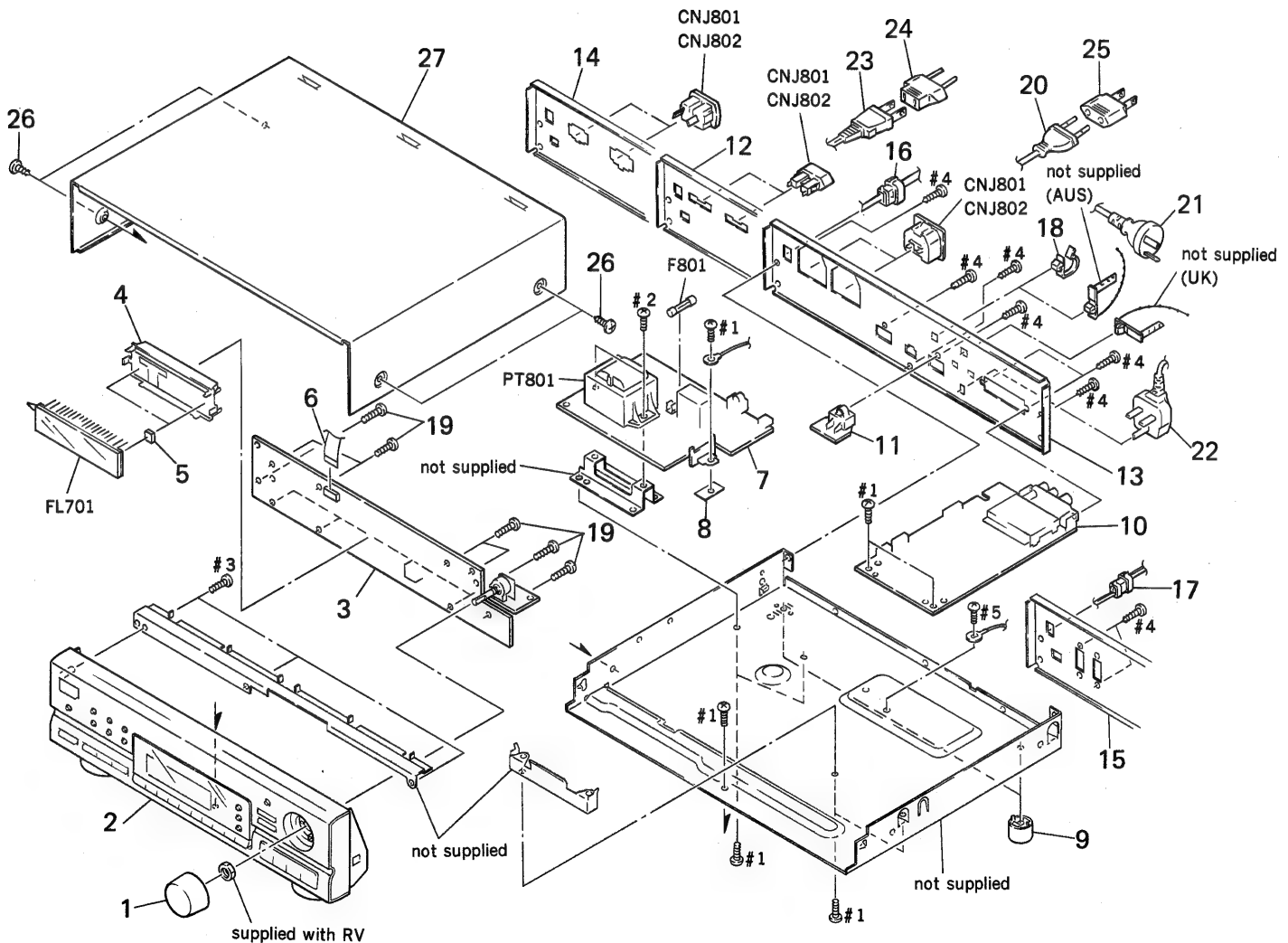
KNOB, BALANCE (WHITE)... (RED)

↑ ↑
Parts Color Cabinet's Color

- Hardware (# mark) list is given in the last of this parts list.

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

- G : German model
- IT : Italian model
- EE : East European model
- EA : Saudi Arabia model
- AUS : Australian model
- MY : Malaysia model
- SP : Singapore model
- JE : Tourist model



Ref. No.	Part No.	Description	Remark
1	4-930-861-21	KNOB (AEP, E, EE, EA, AUS, MY, SP, JE)	
1	4-930-861-31	KNOB (UK, G, IT)	
2	X-4943-391-2	PANEL ASSY (709), FRONT (AEP, E, EE, EA, AUS, MY, SP, JE)	
2	X-4943-452-2	PANEL ASSY (709), FRONT (UK, G, IT)	
* 3	A-4360-057-A	PANEL BOARD, COMPLETE (AEP)	
* 3	A-4360-058-A	PANEL BOARD, COMPLETE (EE)	
* 3	A-4360-059-A	PANEL BOARD, COMPLETE (E, EA, AUS, MY, SP, JE)	
* 3	A-4360-060-A	PANEL BOARD, COMPLETE (IT)	
* 3	A-4360-061-A	PANEL BOARD, COMPLETE (UK)	
* 3	A-4360-062-A	PANEL BOARD, COMPLETE (G)	
* 4	4-923-103-01	HOLDER, FL TUBE	
* 5	4-921-941-01	CUSHION (FL)	
6	1-575-666-11	WIRE, FLAT TYPE (11 CORE)	
* 7	A-4360-052-A	POWER BOARD, COMPLETE (AEP, EE)	
* 7	A-4360-053-A	POWER BOARD, COMPLETE (EA, AUS)	
* 7	A-4360-054-A	POWER BOARD, COMPLETE (E, JE)	
* 7	A-4360-055-A	POWER BOARD, COMPLETE (UK)	
* 7	A-4360-056-A	POWER BOARD, COMPLETE (G, IT)	
* 7	A-4360-634-A	POWER BOARD, COMPLETE (MY, SP)	
* 8	4-937-354-01	SHEET	
9	4-931-169-01	FOOT	
* 10	A-4347-288-A	TUNER (3SJ) BOARD, COMPLETE (AEP, UK)	
* 10	A-4360-063-A	TUNER (2RJ) BOARD, COMPLETE (G, IT)	
* 10	A-4347-287-A	TUNER (2QJ) BOARD, COMPLETE (E, AUS, EA, MY, SP, JE)	
* 10	A-4347-290-A	TUNER (3UJ) BOARD, COMPLETE (EE)	
* 11	1-647-333-11	CONNECTOR BOARD	
* 12	4-956-867-11	PANEL, BACK (AEP:MADE IN JAPAN, EE)	
* 12	4-956-867-32	PANEL, BACK (G)	
* 12	4-956-867-41	PANEL, BACK (IT)	
* 12	4-956-867-71	PANEL, BACK (EA, MY, SP)	
* 12	4-956-867-91	PANEL, BACK (AEP:MADE IN FRANCE)	

Ref. No.	Part No.	Description	Remark
* 13	4-956-867-21	PANEL, BACK (UK)	
* 14	4-956-867-51	PANEL, BACK (AUS)	
* 15	4-956-867-61	PANEL, BACK (E, JE)	
* 16	3-703-244-00	BUSHING (2104), CORD (AEP, UK, G, IT, EE, EA, AUS, MY, SP)	
* 17	3-703-571-11	BUSHING (S) (4516), CORD (E, JE)	
* 18	4-949-235-01	HOOK (AEP, UK, E, G, IT, EE, EA, MY, SP, JE)	
19	4-951-620-01	SCREW (2. 6X8), +BVTP	
△20	1-575-651-11	CORD, POWER (AEP, EE, EA, MY, SP)	
△20	1-575-651-21	CORD, POWER (G, IT)	
△21	1-690-608-11	CORD, POWER (AUS)	
△22	1-696-907-11	CORD, POWER (UK)	
△23	1-575-653-11	CORD, POWER (E, JE)	
△24	1-569-007-11	ADAPTER, CONVERSION 2P (E3, JE)	
△25	1-569-008-11	ADAPTER, CONVERSION 2P (EA, MY, SP)	
26	3-363-099-01	SCREW (CASE 3 TP2)	
* 27	4-939-802-31	CASE	
△CNJ801	1-251-078-11	OUTLET, AC. (AUS)	
△CNJ801	1-526-751-00	OUTLET, AC (UK)	
△CNJ801	1-526-794-11	OUTLET, AC (AEP, G, IT, EE, EA, MY, SP)	
△CNJ802	1-251-078-11	OUTLET, AC. (AUS)	
△CNJ802	1-526-751-00	OUTLET, AC (UK)	
△CNJ802	1-526-794-11	OUTLET, AC (AEP, G, IT, EE, EA, MY, SP)	
△F801	1-532-286-00	FUSE 2. 5A (UK, G, IT)	
△F801	1-532-299-00	FUSE 5A (E, EA, AUS, MY, SP, JE)	
△F801	1-576-229-31	FUSE (H. B. C.) 2. 5A (AEP, EE)	
FL701	1-519-728-11	INDICATOR TUBE, FLUORESCENT	
△PT801	1-449-978-11	TRANSFORMER, POWER (E, EA, AUS, MY, SP, JE)	
△PT801	1-449-979-11	TRANSFORMER, POWER (AEP, UK, G, IT, EE)	

SECTION 5 ELECTRICAL PARTS LIST

CONNECTOR

PANEL

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
All resistors are in ohms.
METAL: Metal-film resistor.
METAL OXIDE: Metal oxide-film resistor.
F: nonflammable

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
In each case, u: μ , for example:
uA...: μ A... uPA...: μ PA...
uPB...: μ PB... uPC...: μ PC... uPD...: μ PD...
- CAPACITORS
uF: μ F
- COILS
uH: μ H

When indicating parts by reference number, please include the board.

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

- G : German model
- IT : Italian model
- EE : East European model
- EA : Saudi Arabia model
- AUS : Australian model
- MY : Malaysia model
- SP : Singapore model
- JE : Tourist model

Ref. No.	Part No.	Description	Remark			
*	1-647-333-11	CONNECTOR BOARD *****				
		< CAPACITOR >				
C815	1-164-081-11	CERAMIC (G, IT)	470PF	10%	50V	
C816	1-164-081-11	CERAMIC (G, IT)	470PF	10%	50V	
C819	1-161-379-00	CERAMIC (AEP, G, IT)	0.01uF	20%	25V	
		< CONNECTOR >				
* CN901	1-569-625-41	SOCKET, CONNECTOR 3P (SYSTEM CONTROL 1)				
CN902	1-568-269-11	SOCKET, CONNECTOR 3P *****				
*	A-4360-057-A	PANEL BOARD, COMPLETE (AEP)				
*	A-4360-058-A	PANEL BOARD, COMPLETE (EE)				
*	A-4360-059-A	PANEL BOARD, COMPLETE (E, EA, AUS, MY, SP, JE)				
*	A-4360-060-A	PANEL BOARD, COMPLETE (IT)				
*	A-4360-061-A	PANEL BOARD, COMPLETE (UK)				
*	A-4360-062-A	PANEL BOARD, COMPLETE (G) *****				
*	4-921-941-01	CUSHION (FL)				
*	4-923-103-01	HOLDER, FL TUBE				
		< CAPACITOR >				
C601	1-162-201-31	CERAMIC	12PF	5%	50V	
C602	1-162-203-31	CERAMIC	15PF	5%	50V	
C603	1-126-163-11	ELECT	4.7uF	20%	50V	
C604	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C605	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C606	1-126-177-11	ELECT	100uF	20%	10V	
C607	1-124-916-11	ELECT	22uF	20%	63V	
C608	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C609	1-126-157-11	ELECT	10uF	20%	16V	
C610	1-126-157-11	ELECT	10uF	20%	16V	
C611	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C612	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C629	1-162-282-31	CERAMIC	100PF	10%	50V	

Ref. No.	Part No.	Description	Remark			
C632	1-162-282-31	CERAMIC	100PF	10%	50V	
C634	1-162-282-31	CERAMIC	100PF	10%	50V	
C635	1-162-215-31	CERAMIC	47PF	5%	50V	
		< CONNECTOR >				
* CN601	1-568-854-11	SOCKET, CONNECTOR 11P				
* CN602	1-568-273-11	SOCKET, CONNECTOR 7P				
		< DIODE >				
D601	8-719-987-63	DIODE 1N4148M				
D602	8-719-987-63	DIODE 1N4148M				
D603	8-719-987-63	DIODE 1N4148M				
D604	8-719-987-63	DIODE 1N4148M				
D605	8-719-987-63	DIODE 1N4148M (AEP, UK)				
D606	8-719-987-63	DIODE 1N4148M (IT)				
D607	8-719-987-63	DIODE 1N4148M (EE)				
D608	8-719-987-63	DIODE 1N4148M (E, EE, EA, AUS, MY, SP, JE)				
D609	8-719-987-63	DIODE 1N4148M				
D610	8-719-987-63	DIODE 1N4148M				
D611	8-719-987-63	DIODE 1N4148M (E, EA, AUS, MY, SP, JE)				
D612	8-719-987-63	DIODE 1N4148M				
D613	8-719-987-63	DIODE 1N4148M				
D614	8-719-987-63	DIODE 1N4148M				
D615	8-719-987-63	DIODE 1N4148M				
D616	8-719-987-63	DIODE 1N4148M				
D617	8-719-987-63	DIODE 1N4148M				
D618	8-719-987-63	DIODE 1N4148M				
D619	8-719-987-63	DIODE 1N4148M				
D621	8-719-987-63	DIODE 1N4148M				
		< FLUORESCENT INDICATOR >				
FL601	1-519-728-11	INDICATOR TUBE, FLUORESCENT				
		< IC >				
IC601	8-759-157-67	IC TMP47C1270AN-H211				
IC602	8-741-100-48	IC SBX1610-59				
		< TRANSISTOR >				
Q601	8-729-900-36	TRANSISTOR DTC124ES				

Ref. No.	Part No.	Description	Remark
< RESISTOR >			
R601	1-249-441-11	CARBON 100K 5% 1/4W	
R602	1-249-429-11	CARBON 10K 5% 1/4W	
R603	1-249-441-11	CARBON 100K 5% 1/4W	
R604	1-249-441-11	CARBON 100K 5% 1/4W	
R605	1-249-425-11	CARBON 4.7K 5% 1/4W F	
R606	1-249-425-11	CARBON 4.7K 5% 1/4W F	
R607	1-249-425-11	CARBON 4.7K 5% 1/4W F	
R608	1-249-425-11	CARBON 4.7K 5% 1/4W F	
R609	1-249-425-11	CARBON 4.7K 5% 1/4W F	
R610	1-249-425-11	CARBON 4.7K 5% 1/4W F	
R611	1-249-425-11	CARBON 4.7K 5% 1/4W F	
R612	1-249-429-11	CARBON 10K 5% 1/4W	
R613	1-249-425-11	CARBON 4.7K 5% 1/4W F	
R614	1-249-429-11	CARBON 10K 5% 1/4W	
R615	1-249-429-11	CARBON 10K 5% 1/4W	
R616	1-249-423-11	CARBON 3.3K 5% 1/4W F	
R617	1-249-429-11	CARBON 10K 5% 1/4W	
R618	1-249-417-11	CARBON 1K 5% 1/4W F	
R619	1-249-429-11	CARBON 10K 5% 1/4W	
R620	1-249-429-11	CARBON 10K 5% 1/4W	
R621	1-249-429-11	CARBON 10K 5% 1/4W	
R622	1-249-429-11	CARBON 10K 5% 1/4W	
R623	1-249-405-11	CARBON 100 5% 1/4W F	
R624	1-249-417-11	CARBON 1K 5% 1/4W F	
R625	1-249-441-11	CARBON 100K 5% 1/4W	
R626	1-249-429-11	CARBON 10K 5% 1/4W	
R627	1-249-429-11	CARBON 10K 5% 1/4W	
R628	1-249-421-11	CARBON 2.2K 5% 1/4W F	
R629	1-249-417-11	CARBON 1K 5% 1/4W F	
R630	1-249-441-11	CARBON 100K 5% 1/4W	
R631	1-249-385-11	CARBON 2.2 5% 1/6W F	
R650	1-249-413-11	CARBON 470 5% 1/4W F	
R651	1-249-413-11	CARBON 470 5% 1/4W F	
R652	1-249-429-11	CARBON 10K 5% 1/4W	
R653	1-249-413-11	CARBON 470 5% 1/4W F	
R654	1-249-410-11	CARBON 270 5% 1/4W F	
R655	1-249-429-11	CARBON 10K 5% 1/4W	
R656	1-249-417-11	CARBON 1K 5% 1/4W F	
R657	1-249-421-11	CARBON 2.2K 5% 1/4W F	
R658	1-249-421-11	CARBON 2.2K 5% 1/4W F	

< SWITCH >

S15	1-571-955-11	SWITCH, ROTARY (TUNING)
S601	1-554-303-21	SWITCH, TACTILE (1)
S602	1-554-303-21	SWITCH, TACTILE (2)
S603	1-554-303-21	SWITCH, TACTILE (3)
S604	1-554-303-21	SWITCH, TACTILE (4)

Ref. No.	Part No.	Description	Remark
S605	1-554-303-21	SWITCH, TACTILE (5)	
S606	1-554-303-21	SWITCH, TACTILE (6)	
S607	1-554-303-21	SWITCH, TACTILE (7)	
S608	1-554-303-21	SWITCH, TACTILE (8)	
S609	1-554-303-21	SWITCH, TACTILE (9)	
S610	1-554-303-21	SWITCH, TACTILE (0)	
S611	1-554-303-21	SWITCH, TACTILE (SHIFT A)	
S612	1-554-303-21	SWITCH, TACTILE (SHIFT B)	
S613	1-554-303-21	SWITCH, TACTILE (SHIFT C)	
S616	1-554-303-21	SWITCH, TACTILE (BAND)	
S617	1-554-303-21	SWITCH, TACTILE (MEMORY)	
S618	1-554-303-21	SWITCH, TACTILE (MEMORY SCAN)	
S619	1-554-303-21	SWITCH, TACTILE (TUNING)	
S620	1-554-303-21	SWITCH, TACTILE (ONCE)	
S621	1-554-303-21	SWITCH, TACTILE (DAILY)	
S622	1-554-303-21	SWITCH, TACTILE (TIME NEXT)	
S623	1-554-303-21	SWITCH, TACTILE (TIME +)	
S624	1-554-303-21	SWITCH, TACTILE (TIME -)	
S625	1-554-303-21	SWITCH, TACTILE (CLOCK)	
S626	1-554-303-21	SWITCH, TACTILE (SLEEP)	
S627	1-554-303-21	SWITCH, TACTILE (CONTROL)	
S628	1-554-303-21	SWITCH, TACTILE (CLEAR)	
S629	1-554-303-21	SWITCH, TACTILE (BACK)	
S630	1-554-303-21	SWITCH, TACTILE (SYSTEM POWER)	
S631	1-554-303-21	SWITCH, TACTILE (ST/MUTE)	
S632	1-554-303-21	SWITCH, TACTILE (MODE)	
S633	1-554-303-21	SWITCH, TACTILE (CHRACTER)	
S634	1-554-303-21	SWITCH, TACTILE (DISPLAY)	

< VIBRATOR >

X601 1-579-564-11 VIBRATOR, CRYSTAL (8.389MHz)

*	A-4360-052-A	POWER BOARD, COMPLETE (AEP, EE)
*	A-4360-053-A	POWER BOARD, COMPLETE (EA, AUS)
*	A-4360-054-A	POWER BOARD, COMPLETE (E, JE)
*	A-4360-055-A	POWER BOARD, COMPLETE (UK)
*	A-4360-056-A	POWER BOARD, COMPLETE (G, IT)
*	A-4360-634-A	POWER BOARD, COMPLETE (MY, SP)

< CAPACITOR >

C801	1-161-744-00	CERAMIC 0.01uF	400V
C802	1-101-004-00	CERAMIC 0.01uF	50V
C803	1-101-004-00	CERAMIC 0.01uF	50V
C804	1-126-105-11	ELECT 1000uF	20% 35V
C805	1-161-379-00	CERAMIC 0.01uF	20% 25V
C806	1-126-022-11	ELECT 47uF	20% 16V
C807	1-126-022-11	ELECT 47uF	20% 16V
C808	1-126-163-11	ELECT 4.7uF	20% 50V

POWER

TUNER

Ref. No.	Part No.	Description	Remark
C809	1-101-004-00	CERAMIC 0.01uF	50V
C810	1-124-918-11	ELECT 47uF	20% 63V
C811	1-124-918-11	ELECT 47uF	20% 63V
		(AEP, UK, G, IT, EE)	
C811	1-124-572-11	ELECT 100uF	20% 63V
		(E, EA, AUS, MY, SP, JE)	
C812	1-124-910-11	ELECT 47uF	20% 50V
C813	1-126-059-11	ELECT 10uF	20% 50V
C814	1-161-494-00	CERAMIC 0.022uF	25V
C817	1-161-379-00	CERAMIC 0.01uF	20% 25V
		(AEP, G, IT)	

< CONNECTOR >

* CN701	1-569-625-11	SOCKET, CONNECTOR 3P (SYSTEM CONTROL 2)
* CN702	1-565-561-11	PIN, CONNECTOR 3P (AU BUS)
CN801	1-535-139-00	BASE POST 22MM (10MM PITCH) 2P
		(EXCEPT E, JE)
* CN802	1-568-308-11	SOCKET, CONNECTOR 4P
* CN803	1-568-830-11	SOCKET, CONNECTOR 11P
* CN804	1-564-321-00	PIN, CONNECTOR 2P
△CNJ801	1-540-041-11	OUTLET, AC (NONPOLAR) (2P) (AC OUTLET)
		(E, JE)

< DIODE >

D701	8-719-987-63	DIODE 1N4148M
D801	8-719-987-63	DIODE 1N4148M
D802	8-719-200-77	DIODE 10E2N
D803	8-719-200-77	DIODE 10E2N
D804	8-719-200-77	DIODE 10E2N
D805	8-719-200-77	DIODE 10E2N
D806	8-719-934-22	DIODE HZS30-2L
D807	8-719-014-66	DIODE UZP-5.6B

< FUSE HOLDER >

* FH801	1-533-213-11	HOLDER, FUSE
* FH802	1-533-213-31	HOLDER, FUSE

< IC >

IC801	8-759-820-09	IC LA5667
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< TRANSISTOR >

Q701	8-729-620-05	TRANSISTOR 2SC2603-EF
Q801	8-729-140-04	TRANSISTOR 2SB1116A-L
Q802	8-729-620-05	TRANSISTOR 2SC2603-EF
Q803	8-729-140-04	TRANSISTOR 2SB1116A-L

< RESISTOR >

R701	1-249-425-11	CARBON 4.7K 5%	1/4W F
R702	1-249-429-11	CARBON 10K 5%	1/4W

Ref. No.	Part No.	Description	Remark
R703	1-249-393-11	CARBON 10 5%	1/4W F
△R801	1-215-864-00	METAL OXIDE 150 5%	1W F
R802	1-249-429-11	CARBON 10K 5%	1/4W
R803	1-249-425-11	CARBON 4.7K 5%	1/4W F
R804	1-249-425-11	CARBON 4.7K 5%	1/4W F
R805	1-249-417-11	CARBON 1K 5%	1/4W F
R806	1-249-437-11	CARBON 47K 5%	1/4W
△R807	1-247-702-11	CARBON 150 5%	1/4W
R808	1-249-425-11	CARBON 4.7K 5%	1/4W F
R809	1-249-437-11	CARBON 47K 5%	1/4W
R810	1-249-417-11	CARBON 1K 5%	1/4W F
R811	1-249-417-11	CARBON 1K 5%	1/4W F

< RELAY >

RY801	1-515-617-11	RELAY
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< SWITCH >

△S801	1-572-675-11	SWITCH, POWER VOLTAGE CHANGE
		(VOLTAGE SELECTOR) (E, EA, AUS, MY, SP, JE)

*	A-4347-287-A	TUNER (2QJ) BOARD, COMPLETE
		(E, EA, AUS, MY, SP, JE)
*	A-4360-063-A	TUNER (2RJ) BOARD, COMPLETE (G, IT)
*	A-4347-288-A	TUNER (3SJ) BOARD, COMPLETE (AEP, UK)
*	A-4347-290-A	TUNER (3UJ) BOARD, COMPLETE (EE)

*	4-612-009-01	SPACER (A) (G, IT)
*	4-923-470-01	PLATE, SHIELD (G, IT)
*	4-930-855-01	SHEET (2P) (G, IT)
*	4-924-988-11	PLATE (ST), GROUND

< CAPACITOR >

C1	1-162-294-31	CERAMIC 1000PF	20%	25V
C2	1-124-477-11	ELECT 47uF	20%	25V
C3	1-163-059-00	CERAMIC CHIP 0.01uF	20%	16V
C4	1-162-294-31	CERAMIC 1000PF	20%	25V
C5	1-163-059-00	CERAMIC CHIP 0.01uF	20%	16V
C6	1-163-059-00	CERAMIC CHIP 0.01uF	20%	16V
C7	1-163-059-00	CERAMIC CHIP 0.01uF	20%	16V
		(G, IT)		
C8	1-163-059-00	CERAMIC CHIP 0.01uF	20%	16V
		(G, IT)		
C9	1-163-059-00	CERAMIC CHIP 0.01uF	20%	16V
C21	1-101-006-00	CERAMIC 0.047uF		50V
		(EXCEPT G, IT)		
C21	1-161-021-11	CERAMIC 0.047uF	10%	25V
		(G, IT)		
C22	1-163-059-00	CERAMIC CHIP 0.01uF	20%	16V
C23	1-124-119-00	ELECT 330uF	20%	16V

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

TUNER

Ref. No.	Part No.	Description	Remark
C24	1-123-382-00	ELECT 3.3uF	20% 100V
C25	1-163-063-00	CERAMIC CHIP 22000PF (AEP, UK, EE)	25V
C25	1-163-059-00	CERAMIC CHIP 0.01uF (G, IT, E, EA, AUS, MY, SP, JE)	20% 16V
C26	1-163-019-00	CERAMIC CHIP 6800PF	20% 12V
C27	1-162-516-11	CERAMIC CHIP 100PF (AEP, UK, E, EE, EA, AUS, MY, SP, JE)	10% 50V
C27	1-162-521-11	CERAMIC CHIP 680PF (G, IT)	10% 50V
C28	1-124-903-11	ELECT 1uF	20% 50V
C29	1-216-516-11	CERAMIC CHIP 100PF (G, IT)	10% 50V
C30	1-124-903-11	ELECT 1uF	20% 50V
C31	1-124-902-00	ELECT 0.47uF	20% 50V
C32	1-124-463-00	ELECT 0.1uF	20% 50V
C33	1-130-481-00	MYLAR 0.0068uF	5% 50V
C34	1-123-382-00	ELECT 3.3uF	20% 100V
C35	1-130-481-00	MYLAR 0.0068uF	5% 50V
C36	1-123-382-00	ELECT 3.3uF	20% 100V
C37	1-124-907-11	ELECT 10uF	20% 50V
C38	1-124-907-11	ELECT 10uF	20% 50V
C39	1-163-059-00	CERAMIC CHIP 0.01uF	20% 16V
C40	1-124-463-00	ELECT 0.1uF	20% 50V
C41	1-124-927-11	ELECT 4.7uF	20% 100V
C42	1-163-059-00	CERAMIC CHIP 0.01uF	20% 16V
C43	1-126-176-11	ELECT 220uF	20% 10V
C44	1-163-059-00	CERAMIC CHIP 0.01uF	20% 16V
C45	1-123-382-00	ELECT 3.3uF	20% 100V
C46	1-161-375-00	CERAMIC 2200P	20% 25V
C48	1-123-382-00	ELECT 3.3uF	20% 100V
C49	1-161-375-00	CERAMIC 2200P	20% 25V
C51	1-124-477-11	ELECT 47uF	20% 25V
C52	1-124-252-00	ELECT 0.33uF	20% 50V
C53	1-163-105-00	CERAMIC CHIP 33PF (AEP, UK, EE)	5% 50V
C54	1-101-005-00	CERAMIC 22000PF (G, IT)	50V
C61	1-163-063-00	CERAMIC CHIP 22000PF	25V
C62	1-163-063-00	CERAMIC CHIP 22000PF	25V
C63	1-163-063-00	CERAMIC CHIP 22000PF	25V
C64	1-163-063-00	CERAMIC CHIP 22000PF	25V
C65	1-163-063-00	CERAMIC CHIP 22000PF (AEP, UK, EE)	25V
C66	1-163-063-00	CERAMIC CHIP 22000PF (AEP, UK, EE)	25V
C67	1-102-120-00	CERAMIC 0.0018uF (AEP, UK, EE)	10% 50V
C68	1-163-011-11	CERAMIC CHIP 1500PF (AEP, UK, EE)	20% 25V

Ref. No.	Part No.	Description	Remark
C69	1-163-063-00	CERAMIC CHIP 22000PF (AEP, UK, EE)	25V
C70	1-163-063-00	CERAMIC CHIP 22000PF (AEP, UK, EE)	25V
C71	1-163-063-00	CERAMIC CHIP 22000PF (AEP, UK, EE)	25V
C72	1-163-063-00	CERAMIC CHIP 22000PF (AEP, UK, EE)	25V
C73	1-163-063-00	CERAMIC CHIP 22000PF (AEP, UK, EE)	25V
C81	1-102-961-00	CERAMIC 27PF	5% 50V
C82	1-102-961-00	CERAMIC 27PF	5% 50V
C83	1-163-059-00	CERAMIC CHIP 0.01uF	20% 16V
C84	1-163-059-00	CERAMIC CHIP 0.01uF	20% 16V
C85	1-163-059-00	CERAMIC CHIP 0.01uF	20% 16V
C86	1-124-477-11	ELECT 47uF	20% 25V
C87	1-163-059-00	CERAMIC CHIP 0.01uF	20% 16V
C88	1-163-059-00	CERAMIC CHIP 0.01uF	20% 16V
C101	1-124-925-11	ELECT 2.2uF	20% 100V
C102	1-124-463-00	ELECT 0.1uF	20% 50V
C103	1-163-059-00	CERAMIC CHIP 0.01uF	20% 16V
C104	1-163-059-00	CERAMIC CHIP 0.01uF	20% 16V
C105	1-124-477-11	ELECT 47uF	20% 25V
C106	1-136-173-00	FILM 0.47uF (AEP, UK, EE)	5% 50V
C107	1-124-463-00	ELECT 0.1uF (AEP, UK, EE)	20% 50V
C108	1-163-063-00	CERAMIC CHIP 22000PF (AEP, UK, EE)	25V
C109	1-102-963-00	CERAMIC 33PF (AEP, UK, EE)	5% 50V
< CARBON MELF >			
CC2	1-249-366-11	CARBON MELF 0 (E, EA, AUS, MY, SP, JE)	5% 1/5W
CC3	1-249-366-11	CARBON MELF 0 (E, EA, AUS, MY, SP, JE)	5% 1/5W
< FILTER >			
CF1	1-567-389-11	FILTER, CERAMIC	
CF2	1-567-389-11	FILTER, CERAMIC	
CF3	1-567-389-11	FILTER, CERAMIC (G, IT)	
CF21	1-577-075-11	OSCILLATOR, CERAMIC	
< TRANSFORMER >			
CFT21	1-404-853-11	TRANSFORMER, IF (CERAMIC FILTER)	
< CONNECTOR >			
* CNJ1	1-568-273-11	SOCKET, CONNECTOR 7P	

TUNER

Ref. No.	Part No.	Description	Remark
* CNJ3	1-568-308-11	SOCKET, CONNECTOR 4P	
CNJ4	1-568-269-11	SOCKET, CONNECTOR 3P	
< DIODE >			
D21	8-719-987-63	DIODE 1N4148M	
D22	8-719-987-63	DIODE 1N4148M	
D23	8-719-987-63	DIODE 1N4148M	
D24	8-719-987-63	DIODE 1N4148M	
D61	8-719-987-63	DIODE 1N4148M (AEP, UK, EE)	
< FRONT END >			
FE1	1-463-862-21	FRONT END, FM (AEP, UK, E, EA, AUS, MY, SP, JE)	
FE1	1-463-857-11	FRONT END (FM) (G, IT)	
FE1	1-465-560-11	FRONT END (FM 3 GANG) (EE)	
FE61	1-236-462-11	ENCAPSULATED COMPONENT (AEP, UK, G, IT, EE)	
FE61	1-236-461-11	ENCAPSULATED COMPONENT (E, EA, AUS, MY, SP, JE)	
FE62	1-236-463-11	ENCAPSULATED COMPONENT (AEP, UK, EE)	
< IC >			
IC21	8-759-821-45	IC LA1851N	
IC81	8-759-820-91	IC LC7218	
< COIL >			
L1	1-410-645-31	INDUCTOR 100uH	
L2	1-410-645-31	INDUCTOR 100uH (G, IT)	
L21	1-407-500-00	INDUCTOR 4.7mH (AEP, UK, G, IT, EE)	
L21	1-410-171-11	INDUCTOR 1mH (E, EA, AUS, MY, SP, JE)	
L61	1-410-525-11	INDUCTOR 220uH (AEP, UK, EE)	
< FILTER >			
LPF21	1-235-164-00	FILTER, LOW PASS	
LPF22	1-235-164-00	FILTER, LOW PASS	
< TRANSISTOR >			
Q1	8-729-230-99	TRANSISTOR 2SC2669-OY	
Q2	8-729-230-99	TRANSISTOR 2SC2669-OY	
Q3	8-729-230-99	TRANSISTOR 2SC2669-OY (G, IT)	
Q4	8-729-230-99	TRANSISTOR 2SC2669-OY (G, IT)	
Q21	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q22	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q23	8-729-900-61	TRANSISTOR DTA114ES	
Q24	8-729-900-80	TRANSISTOR DTC114ES	
Q26	8-729-900-80	TRANSISTOR DTC114ES	
Q27	8-729-620-05	TRANSISTOR 2SC2603-EF (AEP, UK, G, IT, EE)	
Q27	8-729-119-78	TRANSISTOR 2SC2785-HFE (E, EA, AUS, MY, SP, JE)	
Q28	8-729-620-05	TRANSISTOR 2SC2603-EF (AEP, UK, G, IT, EE)	

Ref. No.	Part No.	Description	Remark
Q28	8-729-119-78	TRANSISTOR 2SC2785-HFE (E, EA, AUS, MY, SP, JE)	
Q61	8-729-900-80	TRANSISTOR DTC114ES (AEP, UK, EE)	
Q62	8-729-900-80	TRANSISTOR DTC114ES (AEP, UK, EE)	
Q63	8-729-900-80	TRANSISTOR DTC114ES (AEP, UK, EE)	
Q64	8-729-620-05	TRANSISTOR 2SC2603-EF (AEP, UK, EE)	
Q65	8-729-119-76	TRANSISTOR 2SA1175-HFE (AEP, UK, EE)	
Q66	8-729-900-80	TRANSISTOR DTC114ES (AEP, UK, EE)	
Q81	8-729-900-61	TRANSISTOR DTA114ES	
Q82	8-729-900-80	TRANSISTOR DTC114ES	
Q83	8-729-202-67	TRANSISTOR 2SK246-GR3	
Q84	8-729-230-93	TRANSISTOR 2SC3113-AB	
Q85	8-729-202-67	TRANSISTOR 2SK246-GR3 (AEP, UK, EE)	
Q86	8-729-230-93	TRANSISTOR 2SC3113-AB (AEP, UK, EE)	
< RESISTOR >			
△R1	1-249-401-11	CARBON 47 5% 1/4W F (EXCEPT G, IT)	
△R1	1-249-397-11	CARBON 22 5% 1/4W F (G, IT)	
R3	1-249-329-11	CARBON MELF 330 5% 1/8W	
R4	1-249-329-11	CARBON MELF 330 5% 1/8W	
R5	1-249-329-11	CARBON MELF 330 5% 1/8W (AEP, UK, E, EE, EA, AUS, MY, SP, JE)	
R6	1-249-350-11	CARBON MELF 18K 5% 1/8W	
R7	1-249-329-11	CARBON MELF 330 5% 1/8W	
R8	1-249-332-11	CARBON MELF 560 5% 1/8W	
R9	1-249-352-11	CARBON MELF 27K 5% 1/8W	
R10	1-249-329-11	CARBON MELF 330 5% 1/8W (G, IT)	
R11	1-249-350-11	CARBON MELF 18K 5% 1/8W (G, IT)	
R12	1-249-329-11	CARBON MELF 330 5% 1/8W (G, IT)	
R13	1-249-334-11	CARBON MELF 820 5% 1/8W (G, IT)	
R14	1-249-352-11	CARBON MELF 27K 5% 1/8W (G, IT)	
R15	1-249-347-11	CARBON MELF 10K 5% 1/8W (G, IT)	
R16	1-249-343-11	CARBON MELF 4.7K 5% 1/8W (G, IT)	
△R21	1-249-404-00	CARBON 82 5% 1/4W F	
R22	1-249-430-11	CARBON 12K 5% 1/4W (EXCEPT G, IT)	
R22	1-249-431-11	CARBON 15K 5% 1/4W (G, IT)	
R23	1-249-335-11	CARBON MELF 1K 5% 1/8W	
R24	1-249-353-11	CARBON MELF 33K 5% 1/8W	
R25	1-249-346-11	CARBON MELF 8.2K 5% 1/8W	
R27	1-249-432-11	CARBON 18K 5% 1/4W	
R28	1-249-423-11	CARBON 3.3K 5% 1/4W F	
R29	1-249-347-11	CARBON MELF 10K 5% 1/8W	
R31	1-249-331-11	CARBON MELF 470 5% 1/8W	
R32	1-249-347-11	CARBON MELF 10K 5% 1/8W	
R33	1-249-347-11	CARBON MELF 10K 5% 1/8W	
R34	1-249-425-11	CARBON 4.7K 5% 1/4W F	
R35	1-249-355-11	CARBON MELF 47K 5% 1/8W	

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

TUNER

Ref. No.	Part No.	Description	Remark
R37	1-249-359-11	CARBON MELF	100K 5% 1/8W
R38	1-249-363-11	CARBON MELF	220K 5% 1/8W
R39	1-249-339-11	CARBON MELF	2.2K 5% 1/8W
R40	1-249-338-11	CARBON MELF	1.8K 5% 1/8W
R41	1-249-344-11	CARBON MELF	5.6K 5% 1/8W
R42	1-249-359-11	CARBON MELF	100K 5% 1/8W
R43	1-249-363-11	CARBON MELF	220K 5% 1/8W
R44	1-249-339-11	CARBON MELF	2.2K 5% 1/8W
R45	1-249-338-11	CARBON MELF	1.8K 5% 1/8W
R46	1-249-344-11	CARBON MELF	5.6K 5% 1/8W
△R47	1-249-409-91	CARBON	220 5% 1/4W F
R48	1-249-359-11	CARBON MELF	100K 5% 1/8W
R49	1-249-359-11	CARBON MELF	100K 5% 1/8W
R61	1-249-359-11	CARBON MELF	100K 5% 1/8W
R62	1-249-355-11	CARBON MELF	47K 5% 1/8W
R63	1-249-315-11	CARBON MELF (E, EA, AUS, MY, SP, JE)	22 5% 1/8W
R64	1-249-351-11	CARBON MELF (AEP, UK, EE)	22K 5% 1/8W
R65	1-249-355-11	CARBON MELF (AEP, UK, EE)	47K 5% 1/8W
R66	1-215-493-00	METAL (AEP, UK, EE)	1M 5% 1/4W
R67	1-249-359-11	CARBON MELF (AEP, UK, EE)	100K 5% 1/8W
R68	1-249-352-11	CARBON MELF (AEP, UK, EE)	27K 5% 1/8W
R69	1-249-351-11	CARBON MELF (AEP, UK, EE)	22K 5% 1/8W
R70	1-249-331-11	CARBON MELF (AEP, UK, EE)	470 5% 1/8W
R71	1-249-339-11	CARBON MELF (AEP, UK, EE)	2.2K 5% 1/8W
R72	1-249-351-11	CARBON MELF (AEP, UK, EE)	22K 5% 1/8W
R73	1-249-347-11	CARBON MELF (AEP, UK, EE)	10K 5% 1/8W
R74	1-249-347-11	CARBON MELF (AEP, UK, EE)	10K 5% 1/8W
R75	1-249-343-11	CARBON MELF (AEP, UK, EE)	4.7K 5% 1/8W
R81	1-249-335-11	CARBON MELF	1K 5% 1/8W
R82	1-249-335-11	CARBON MELF	1K 5% 1/8W
R83	1-249-335-11	CARBON MELF	1K 5% 1/8W
R84	1-249-335-11	CARBON MELF	1K 5% 1/8W
R85	1-249-347-11	CARBON MELF	10K 5% 1/8W
R86	1-249-335-11	CARBON MELF	1K 5% 1/8W
R87	1-249-347-11	CARBON MELF	10K 5% 1/8W
R88	1-249-343-11	CARBON MELF	4.7K 5% 1/8W
R89	1-249-335-11	CARBON MELF	1K 5% 1/8W

Ref. No.	Part No.	Description	Remark
R90	1-249-343-11	CARBON MELF (AEP, UK, EE, G, IT)	4.7K 5% 1/8W
R90	1-249-347-11	CARBON MELF (E, EA, AUS, MY, SP, JE)	10K 5% 1/8W
R91	1-249-335-11	CARBON MELF	1K 5% 1/8W
△R92	1-249-401-11	CARBON	47 5% 1/4W F
R101	1-249-341-11	CARBON MELF	3.3K 5% 1/8W
R102	1-249-332-11	CARBON MELF	560 5% 1/8W
R103	1-249-335-11	CARBON MELF	1K 5% 1/8W
R104	1-249-328-11	CARBON MELF	270 5% 1/8W
R105	1-249-343-11	CARBON MELF	4.7K 5% 1/8W
R106	1-249-339-11	CARBON MELF	2.2K 5% 1/8W
R107	1-249-343-11	CARBON MELF	4.7K 5% 1/8W
R108	1-249-323-11	CARBON MELF	100 5% 1/8W
R109	1-249-343-11	CARBON MELF (AEP, UK, E, EE, EA, AUS, MY, SP, JE)	4.7K 5% 1/8W
△R110	1-249-405-11	CARBON	100 5% 1/4W F
R111	1-249-341-11	CARBON MELF (AEP, UK, EE)	3.3K 5% 1/8W
R112	1-249-332-11	CARBON MELF (AEP, UK, EE)	560 5% 1/8W
R113	1-249-335-11	CARBON MELF (AEP, UK, EE)	1K 5% 1/8W
R114	1-249-328-11	CARBON MELF (AEP, UK, EE)	270 5% 1/8W
R115	1-249-351-11	CARBON MELF (AEP, UK, EE)	22K 5% 1/8W
R116	1-249-339-11	CARBON MELF (AEP, UK, EE)	2.2K 5% 1/8W
R117	1-249-343-11	CARBON MELF (AEP, UK, EE)	4.7K 5% 1/8W
R118	1-249-323-11	CARBON MELF (AEP, UK, EE)	100 5% 1/8W
< VARIABLE RESISTOR >			
RV21	1-241-628-11	RES, ADJ, CARBON 2.2K (EXCEPT G, IT)	
RV21	1-241-629-11	RES, ADJ, CARBON 4.7K (G, IT)	
RV22	1-241-631-11	RES, ADJ, CARBON 22K	
RV24	1-241-631-11	RES, ADJ, CARBON 22K (EXCEPT G, IT)	
RV24	1-238-019-11	RES, ADJ, CARBON 47K (G, IT)	
< TRANSFORMER >			
T21	1-404-807-11	TRANSFORMER, DISCRIMINATOR	
T23	1-236-465-11	ENCAPSULATED COMPONENT (G, IT)	
< TERMINAL >			
* TM1	1-537-138-31	TERMINAL BOARD (ANTENNA) (AEP, UK, G, IT, EE)	
TM1	1-537-238-21	TERMINAL BOARD (ANTENNA) (E, EA, AUS, MY, SP, JE)	

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

TUNER

Ref. No. Part No. Description Remark

< TEST PIN >

* TP1 1-560-060-00 PIN, CONNECTOR 2P

< VIBRATOR >

XT81 1-577-126-21 VIBRATOR, CRYSTAL (7.2MHz)

MISCELLANEOUS

- △6 1-575-666-11 WIRE, FLAT TYPE (11 CORE)
- △20 1-575-651-11 CORD, POWER (AEP, EE, EA, MY, SP)
- △20 1-575-651-21 CORD, POWER (G, IT)
- △21 1-690-608-11 CORD, POWER (AUS)
- △22 1-696-907-11 CORD, POWER (UK)

- △23 1-575-653-11 CORD, POWER (E, JE)
- △24 1-569-007-11 ADAPTER, CONVERSION 2P (E3, JE)
- △25 1-569-008-11 ADAPTER, CONVERSION 2P (EA, MY, SP)
- △CNJ801 1-251-078-11 OUTLET, AC. (AUS)
- △CNJ801 1-526-751-00 OUTLET, AC (UK)

- △CNJ801 1-526-794-11 OUTLET, AC (AEP, G, IT, EE, EA, MY, SP)
- △CNJ802 1-251-078-11 OUTLET, AC. (AUS)
- △CNJ802 1-526-751-00 OUTLET, AC (UK)
- △CNJ802 1-526-794-11 OUTLET, AC (AEP, G, IT, EE, EA, MY, SP)
- △F801 1-532-286-00 FUSE 2.5A (UK, G, IT)

- △F801 1-532-299-00 FUSE 5A (E, EA, AUS, MY, SP, JE)
- △F801 1-576-229-31 FUSE (H. B. C.) 2.5A (AEP, EE)
- △PT801 1-449-978-11 TRANSFORMER, POWER (E, EA, AUS, MY, SP, JE)
- △PT801 1-449-979-11 TRANSFORMER, POWER (AEP, UK, G, IT, EE)

HARDWARE LIST

- #1 7-685-646-79 SCREW +BVTP 3X8 TYPE2 N-S
- #2 7-685-647-79 SCREW +BVTP 3X10 TYPE2 N-S
- #3 7-685-134-19 SCREW +BTP 2.6X8 TYPE2 N-S
- #4 7-621-849-00 SCREW (BV/RING)
- #5 7-685-645-79 SCREW +BVTP 3X6 TYPE2 N-S (UK)

The components identified by
mark △ or dotted line with mark
△ are critical for safety.
Replace only with part number
specified.

TA-A77E/D709E

SERVICE MANUAL

REVISED

AEP Model
UK Model

TA-D709E

E Model
Australian Model
Tourist Model

TA-A77E



This set is the Preamplifier section in LBT-A77CD/A77CDM/D709CD/D759CD.

This photo is TA-A77E.

SPECIFICATIONS

Input	Jack type	Sensitivity	Impedance
VIDEO 1/MD	Phono	245 mV	47 kohms
VIDEO 2	Phono	245 mV	47 kohms
VIDEO 3	Phono	245 mV	47 kohms
PHONO (MM)	Phono	3.3 mV	47 kohms
MIC	Phone	1 mV	10 kohms

Audio output	Jack type	Voltage	Impedance
VIDEO 1/MD	Phono	235 mV	2 kohms
VIDEO 2	Phono	235 mV	2 kohms
CENTER OUT	Phono		

• Abbreviations

G : German model
IT : Italian model
EE: East European model

Video output (phono jacks)

VIDEO 1/MD	1 Vp-p, 75 ohm unbalanced, sync negative
VIDEO 2	1 Vp-p, 75 ohm unbalanced, sync negative
MONITOR	1 Vp-p, 75 ohm unbalanced, sync negative
Frequency response	15 Hz to 20 kHz ± 0.3 dB
Power requirements	220—230V AC, 50/60Hz (AEP, G, IT, EE model) 240V AC, 50/60Hz (UK model) 120V/220—240V AC, adjustable with the voltage selector, 50/60Hz (A77E)
Power consumption	15 W
Mass	Approx. 3.7 kg (8 lbs 3 oz)
Dimensions	Approx. 355 x 135 x 330 mm (14 x 5 $\frac{1}{4}$ x 12 $\frac{7}{8}$ inches) (w/h/d, including projections)

Design and specifications are subject to change without notice.

Note

This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

Dolby noise reduction and HX Pro headroom extension manufactured under license from Dolby Laboratories Licensing Corporation. HX Pro originated by Bang & Olufsen.

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SAFETY-RELATED COMPONENT WARNING!!

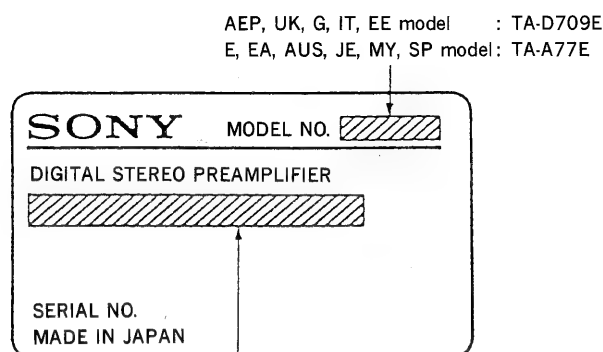
COMPONENTS IDENTIFIED BY MARK \triangle OR DOTTED LINE WITH MARK \triangle ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

DIGITAL STEREO PREAMPLIFIER

SONY®

MODEL IDENTIFICATION

—Specification Label—



AEP, IT, EE model: AC: 220V—230V~50/60Hz 15W
 UK model : AC: 240V~50/60Hz
 G model : SYSTEM LBT-D709
 AC: 220V—230V~50/60Hz 15W
 AUS, E, JE,
 MY, SP, EA model: AC: 110V—120V/220V—240V~50/60Hz 15W

• Abbreviations

G : German model
 IT : Italian model
 EE : East European model
 EA : Saudi Arabia model
 AUS: Australian model
 JE : Tourist model
 MY : Malaysia model
 SP : Singapore model

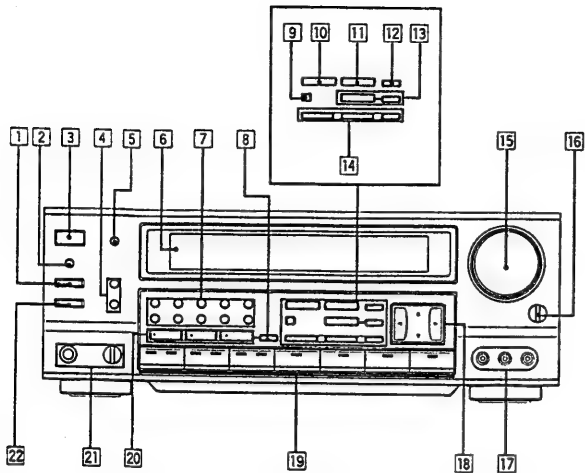
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SECTION 1 GENERAL

This section is extracted from instruction manual.

1-1. LOCATION OF CONTROLS



- 1 EFFECT button and indicator (22)
- 2 KARAOKE PON button and indicator (150) (A77E only)
- 3 POWER switch (18)
- 4 Dynamic Bass System controls (FREQUENCY, LEVEL) (22)
- 5 DISPLAY button (136)
- 6 Display window
- 7 Numeric buttons (124, 140, 142)
- 8 MEMORY button (140)
- 9 PRO LOGIC MODE button (120)
- 10 EFFECT LEVEL button (124)
- 11 ACOUSTIC CONTROL button (122, 130, 138)
- 12 CHARACTER EDIT button (144)
- 13 SURROUND CONTROL and ON/OFF buttons (130)
- 14 EQUALIZER BAND, SLOPE and FLAT buttons (132, 134)
- 15 VOLUME control (22)
- 16 BALANCE control (22)
- 17 VIDEO 3 INPUT jacks (14)
- 18 CURSOR CONTROL button (122, 130, 132, 138, 144)
- 19 Function selectors and indicators (42)
- 20 SELECT 10, MORE 10 and P. FILE buttons (124, 142)
- 21 MIC (microphone) jack and MIC LEVEL control (152)
- 22 P. FUNCTION button and indicator (156)

SECTION 2 SERVICE NOTES

2-1. NOTES AT SERVICE AND INSPECTION

The parts No. suffix of the board differs from set to set.

There are four types of parts No. suffix for each board.

Check the type of the set according to the following list before performing service and inspection.

Board Name	The Parts No. Suffix of the Board			
	TYPE I	TYPE II	TYPE III	TYPE IV
MAIN	11	12	13	14
MICROPHONE AMPLIFIER	11	11	12	13
VOL	12	14	15	16
BALANCE	11	11	11	12
VIDEO (3)	11	11	12	12
VIDEO FUNCTION	11	11	12	12
PANEL	11	12	12	13
AU FUNCTION	11	13	14	14

Note : Follow the disassembly procedure in the numerical order given.

2-2. REMOVAL OF JOINT

② Press the joint for front panel and remove it from POWER switch.

③ Remove the joint in the direction of arrow.

POWER switch (S701)

front panel

① Push the button (P) and POWER switch to turn ON.

SECTION 3 DIAGRAMS

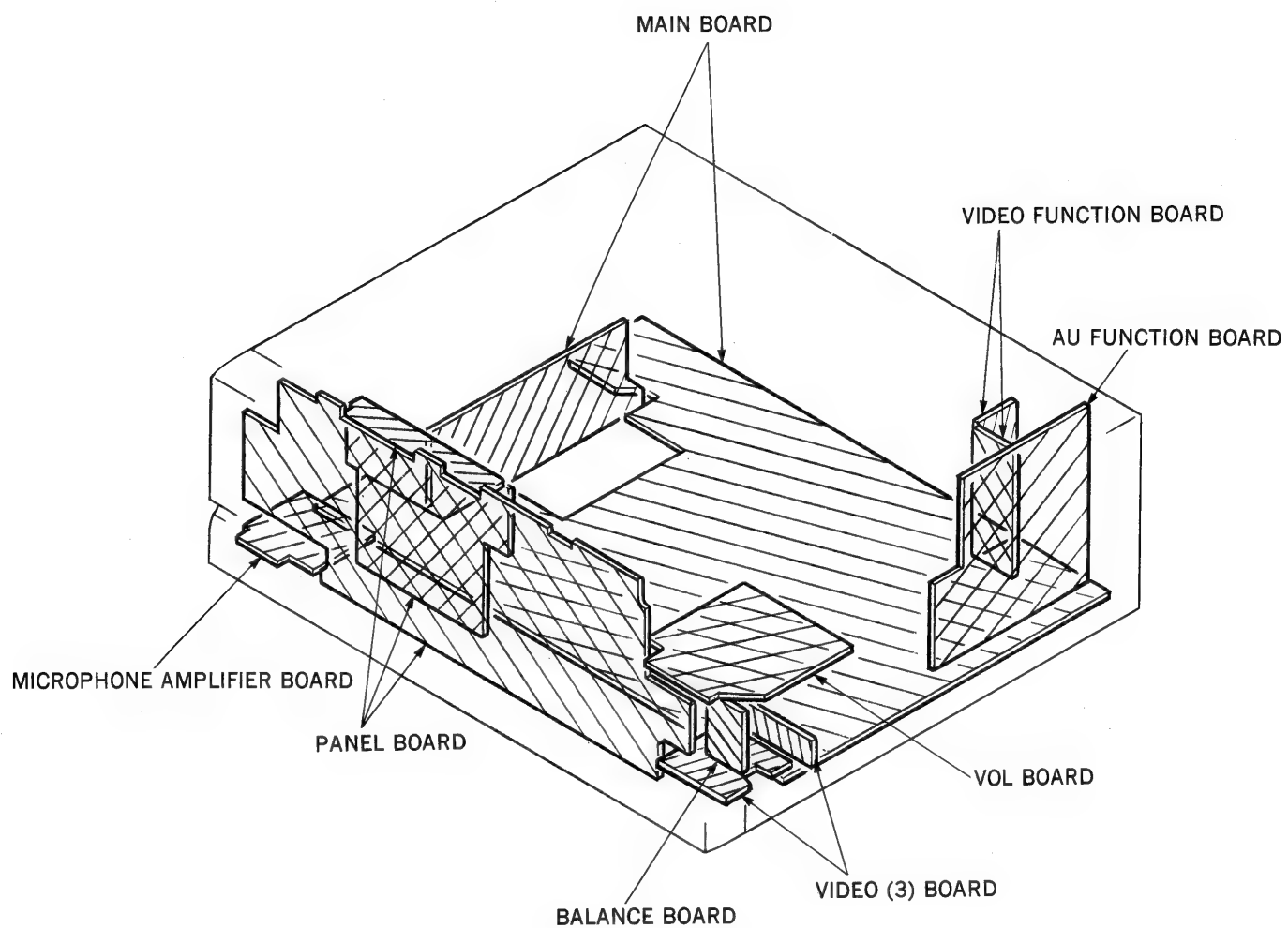
3-1. PIN DESCRIPTION

● IC202 LC83015E (Digital Signal Processor)

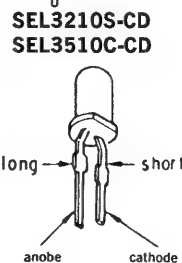
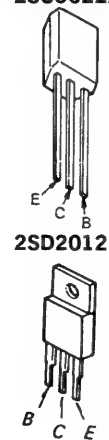
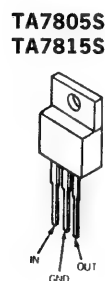
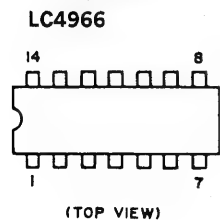
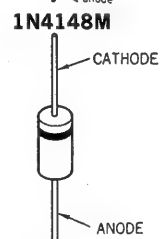
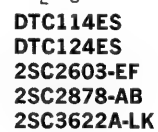
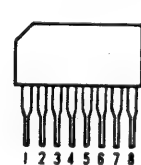
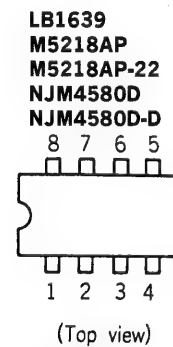
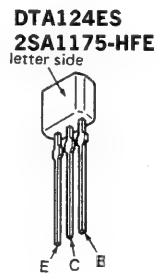
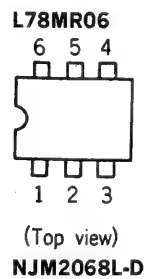
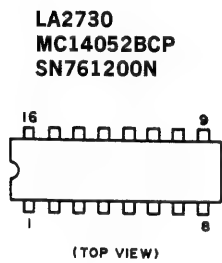
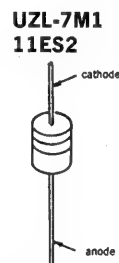
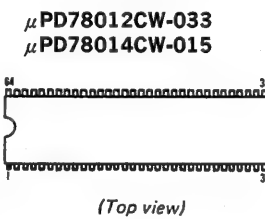
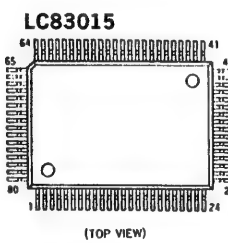
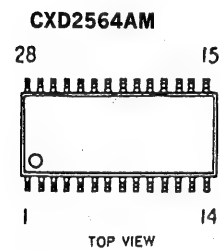
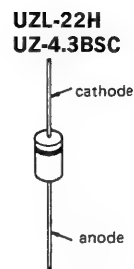
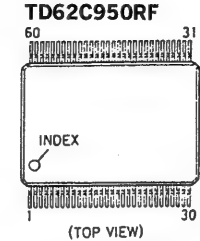
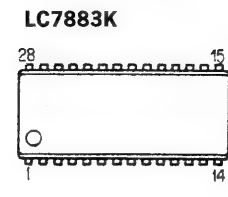
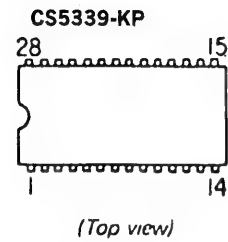
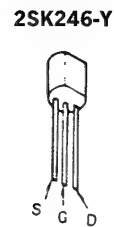
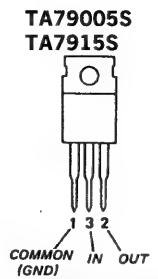
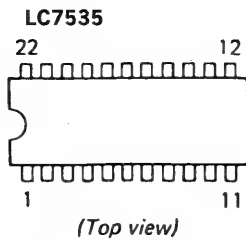
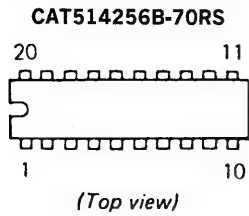
Pin No.	Pin Name	I/O	Function
1—6	P0—P5	I/O	General purpose input/output ports (with pull-up resistor)
7	ASI1	I	Audio data serial input 1 pin
8	BCK1	I	Bit clock input pin used for ASI1 input (64fs or 32fs is applied).
9	FS384I	I	384fs or 512fs input pin.
10	LRCKI	I	L/R channel identification signal input pin (“H” for Lch; “L” for Rch).
11	ASI2	I	Audio data serial input 2 pin
12	BCK2	I	Bit clock input pin for ASI2 input (64fs or 32fs is applied).
13	VDD1	—	+5V power pin
14—17	TEST1—TEST4	I	Pins used for tests, normally connected to GND.
18	VSS1	—	GND pin
19	TEST5	O	Output pin used for test, normally open.
20	$\overline{\text{RAS}}$	O	$\overline{\text{RAS}}$ signal output pin used for access to external DRAM.
21	$\overline{\text{CAS}}$	O	$\overline{\text{CAS}}$ signal output pin used for access to external DRAM.
22	$\overline{\text{DWRT}}$	O	Data write signal output pin used for access to external memory.
23	$\overline{\text{DREAD}}$	O	Data read signal output pin used for access to external memory.
24	$\overline{\text{CE/CS}}$	O	Chip enable signal output pin used for activating external SRAM or pseudo SRAM.
25—32	D7—D0	I/O	Data input/output pins used for communication with external memories (D0—D3 for one DRAM; D0—D7 for two DRAMs or SRAM or pseudo SRAM).
33	VSS2	—	GND pin
34—50	A0—A16	O	External memory address output pin
51	VDD2	—	+5V power pin
52	OSC1	I	Oscillator input pin (connected to VDD or VSS when oscillator is not used).
53	OSC2	O	Oscillator output pin (open when oscillator is not used or external clock is used).
54	VSS3	—	GND pin
55	FS384O	O	384fs or 512fs output pin (through output of FS384I or self-run oscillating clock).
56	FS192O	O	192fs or 256fs output pin (1/2 frequency division output of FS384O).
57	FS128O	O	128fs output pin (1/3 or 1/4 frequency division output of FS384O).
58	FS64O	O	64fs or 32fs output pin (1/2 frequency division output of FS128O or through output of BCK1).
59	FS32O	O	32fs or 16fs output pin (1/2 frequency division output of FS64O).
60	LRCKO	O	1fs output pin (1/64 frequency division output of FS64O or through output of LRCKI)
61	AOWCK	O	2fs or 1fs output pin (1/32 frequency division output of FS64O).
62	ASO	O	Audio data serial output 1 pin
63	AOTDF1	O	Audio data serial output 2 pin
64	AOTDF2	O	Audio data serial output 3 pin
65	SI	I	Input pin for serial data from control micro computer (8 bit data).
66	SICK	I	Input pin for serial clock for SI.
67	$\overline{\text{SIRQ}}$	I	Serial input request signal input pin
68	$\overline{\text{SIACK}}$	O	Output pin for indicating that serial input being executed.
69	$\overline{\text{SRDY}}$	I	Input pin for ready signal indicating that serial data from control micro computer is complete.
70	SO	O	Output pin for sending serial data to control micro computer (8 bit data).
71	SOCK	I	Input pin for serial clock for SO.

Pin No.	Pin Name	I/O	Function
72	$\overline{\text{SORQ}}$	I	Input pin for serial output request signal.
73	$\overline{\text{SOAK}}$	O	Output pin for indicating that serial output is being executed.
74	VSS4	—	GND
75	$\overline{\text{RES}}$	I	reset pin (with pull-up resistor).
76	$\overline{\text{INT}}$	I	Interrupt request input pin (with pull-up resistor).
77	VDD3	—	+5V power pin
78	$\overline{\text{SELC}}$	I	Select pin (with pull-down resistor) used to determine whether system clock of LS83015 is produced from FS384I (L) or from self-run oscillating clock (H).
79	$\overline{\text{SACK1}}$	I	Select pin (with pull-down resistor) used to determine whether 1/3 frequency division output of FS3840 is used (L) or 1/4 frequency division output is used (H) as FS1280.
80	$\overline{\text{SACK2}}$	I	Select pin (with pull-down resistor) used to determine whether each FS output clock is produced from FS384I, LRCKI and BCK1 (L) or from self-run oscillating clock (H).

3-2. CIRCUIT BOARDS LOCATION

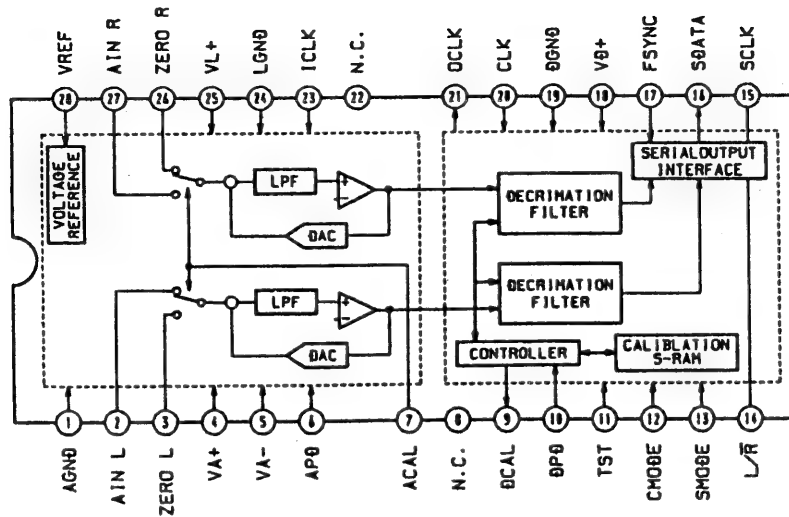


3-3. SEMICONDUCTOR LEAD LAYOUTS

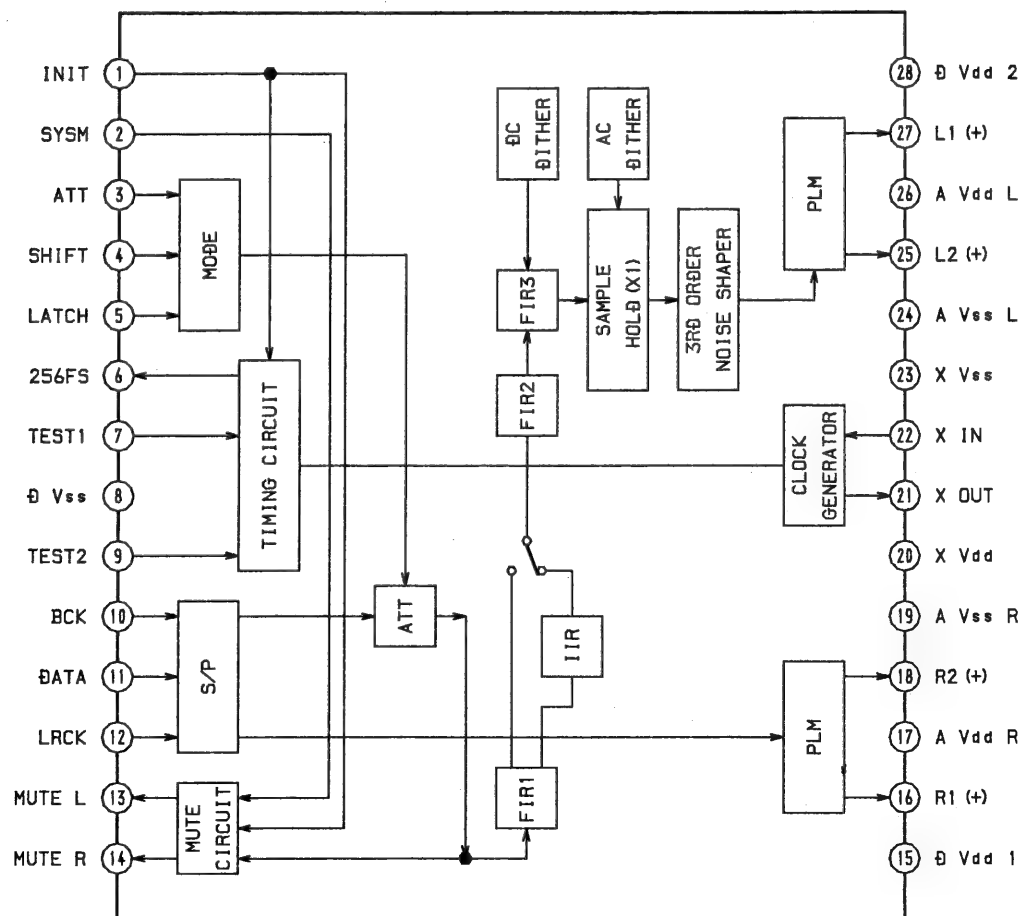


• IC Block Diagrams

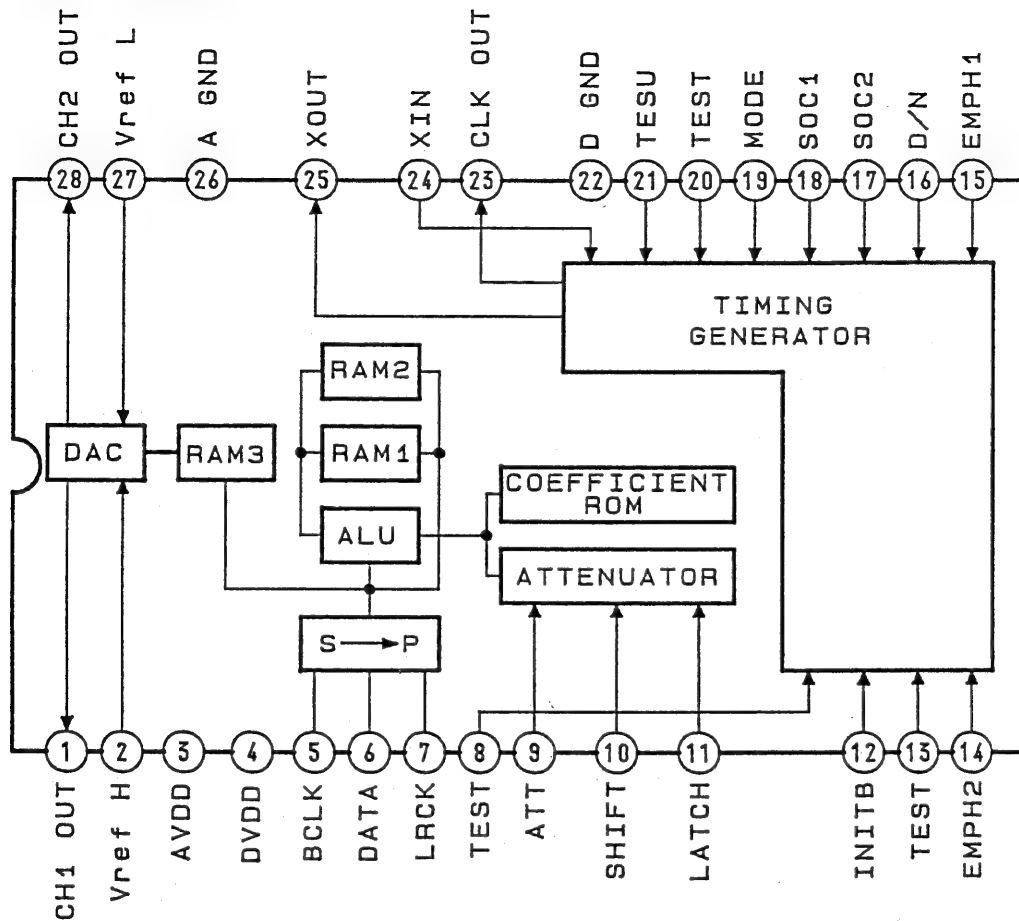
IC201 CS5339-KP



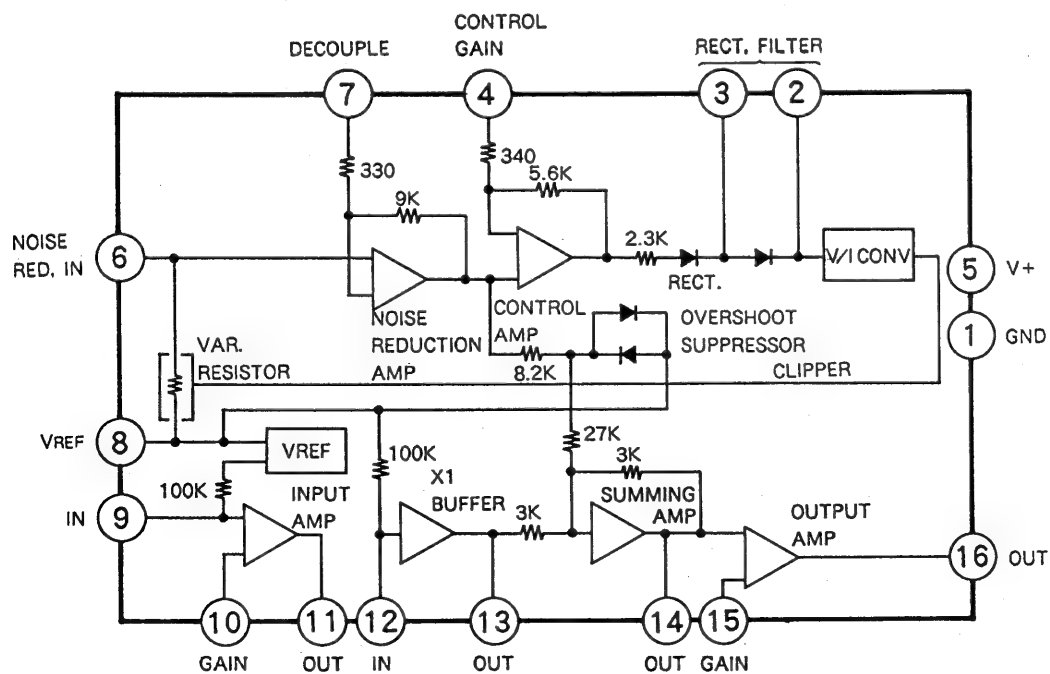
IC204 CXD2564AM



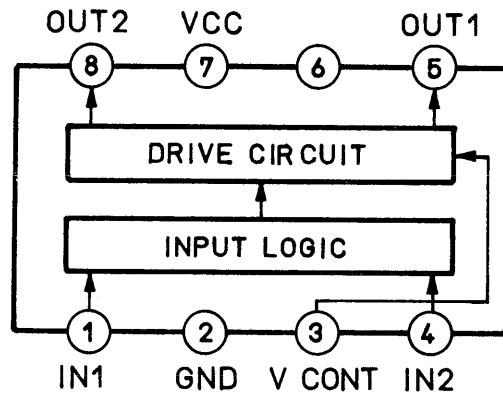
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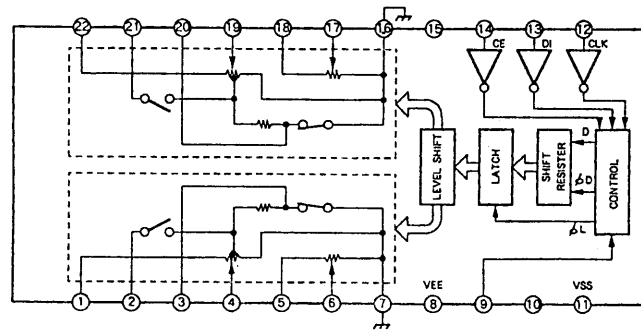
IC206 LA2730



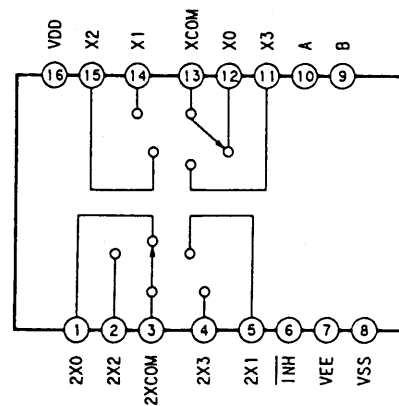
IC251 LB1639



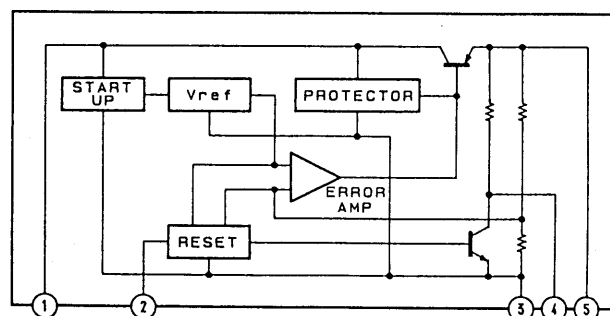
IC403 LC7535



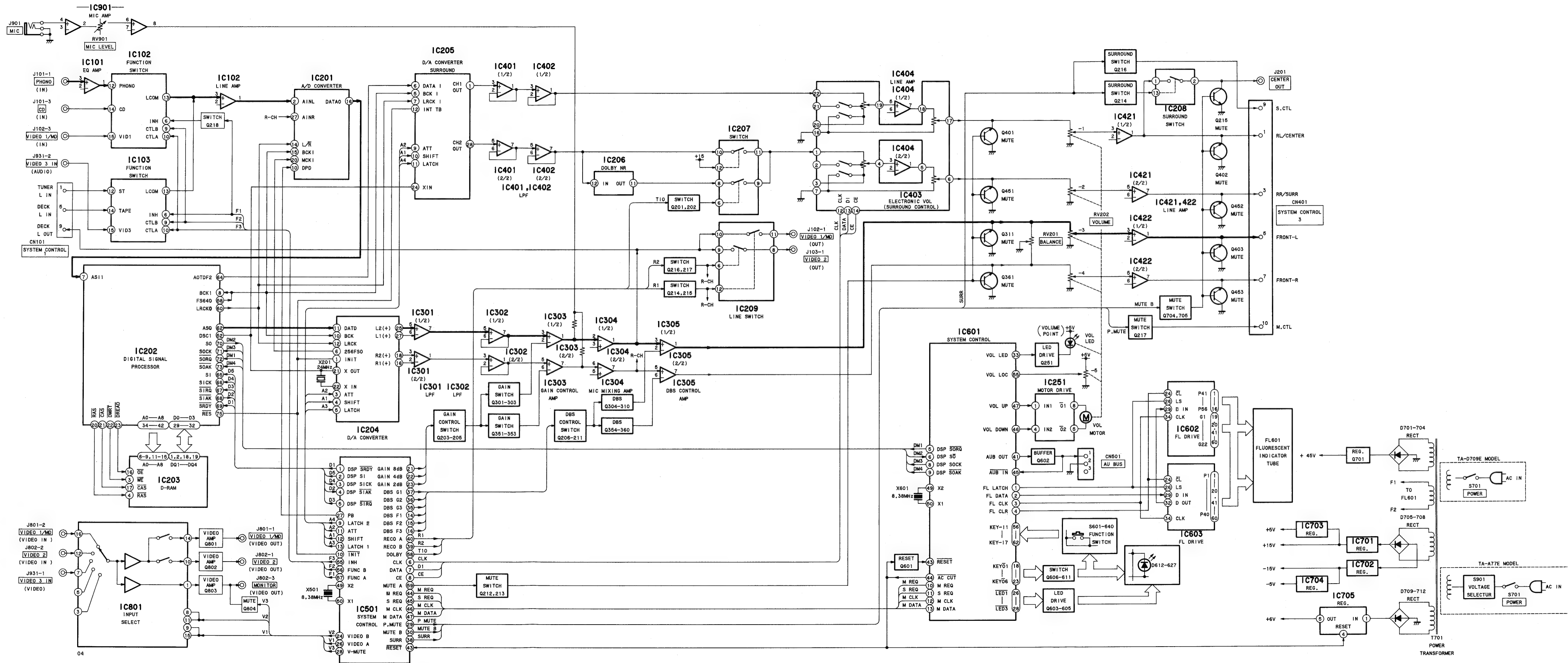
IC102, 103 MC14052 (AU FUNCTION board)



IC705 L78MR06



3-4. BLOCK DIAGRAM



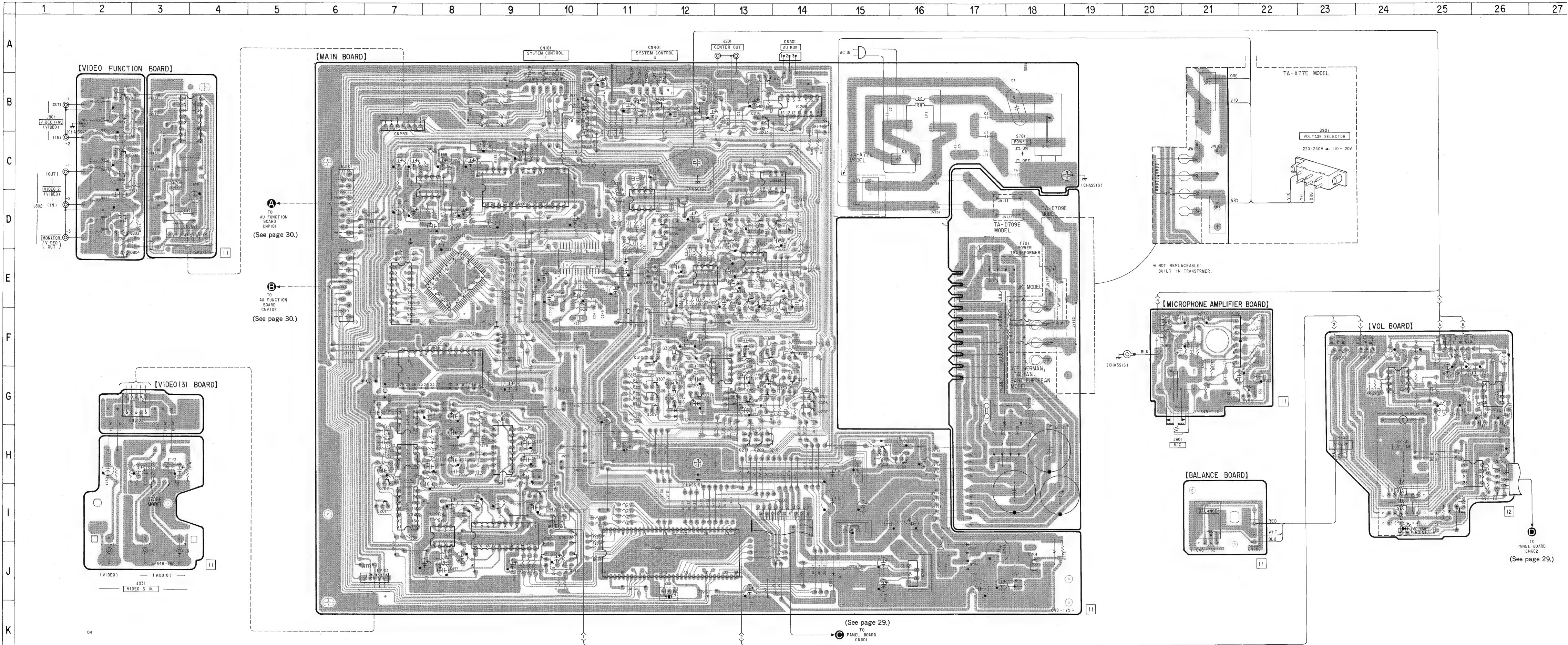
• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D251	I-25	IC801	B-3
D301	G-12	IC901	F-21
D302	F-12		
D303	G-12	Q201	I-7
D351	G-13	Q202	H-7
D352	F-13	Q203	D-12
D353	G-13	Q204	D-12
D701	J-17	Q205	D-12
D702	J-17	Q206	G-14
D703	J-17	Q207	G-14
D704	J-17	Q208	G-14
D705	H-17	Q209	H-13
D706	H-18	Q210	H-13
D707	G-17	Q211	H-13
D708	G-18	Q212	J-10
D709	E-17	Q213	J-10
D710	E-17	Q214	B-13
D711	E-17	Q215	B-13
D712	E-18	Q216	B-13
D713	J-18	Q217	B-14
D714	J-18	Q251	I-25
D715	J-14	Q301	D-14
D717	H-17	Q302	D-13
D718	H-17	Q303	D-13
D719	H-15	Q304	G-12
D720	H-16	Q305	F-12
D721	J-18	Q306	G-12
D722	B-14	Q307	G-11
		Q308	G-11
IC102	C-8	Q309	G-11
IC201	C-9	Q310	F-11
IC202	E-8	Q311	G-12
IC203	E-7	Q351	E-14
IC204	E-10	Q352	E-13
IC205	G-8	Q353	E-13
IC206	H-9	Q354	G-13
IC207	I-7	Q355	F-13
IC208	B-14	Q356	G-13
IC251	H-25	Q357	G-14
IC301	D-11	Q358	F-14
IC302	C-13	Q359	G-14
IC303	E-13	Q360	F-13
IC304	E-12	Q361	G-13
IC305	G-13	Q401	I-10
IC401	G-7	Q402	B-10
IC402	H-7	Q403	B-12
IC403	I-9	Q451	I-9
IC404	I-8	Q452	B-11
IC421	G-24	Q453	B-12
IC422	G-26	Q701	J-18
IC501	J-12	Q704	H-16
IC701	H-15	Q705	H-15
IC702	I-15	Q801	B-2
IC703	H-11	Q802	C-2
IC704	C-9	Q803	D-2
IC705	J-16	Q804	E-2

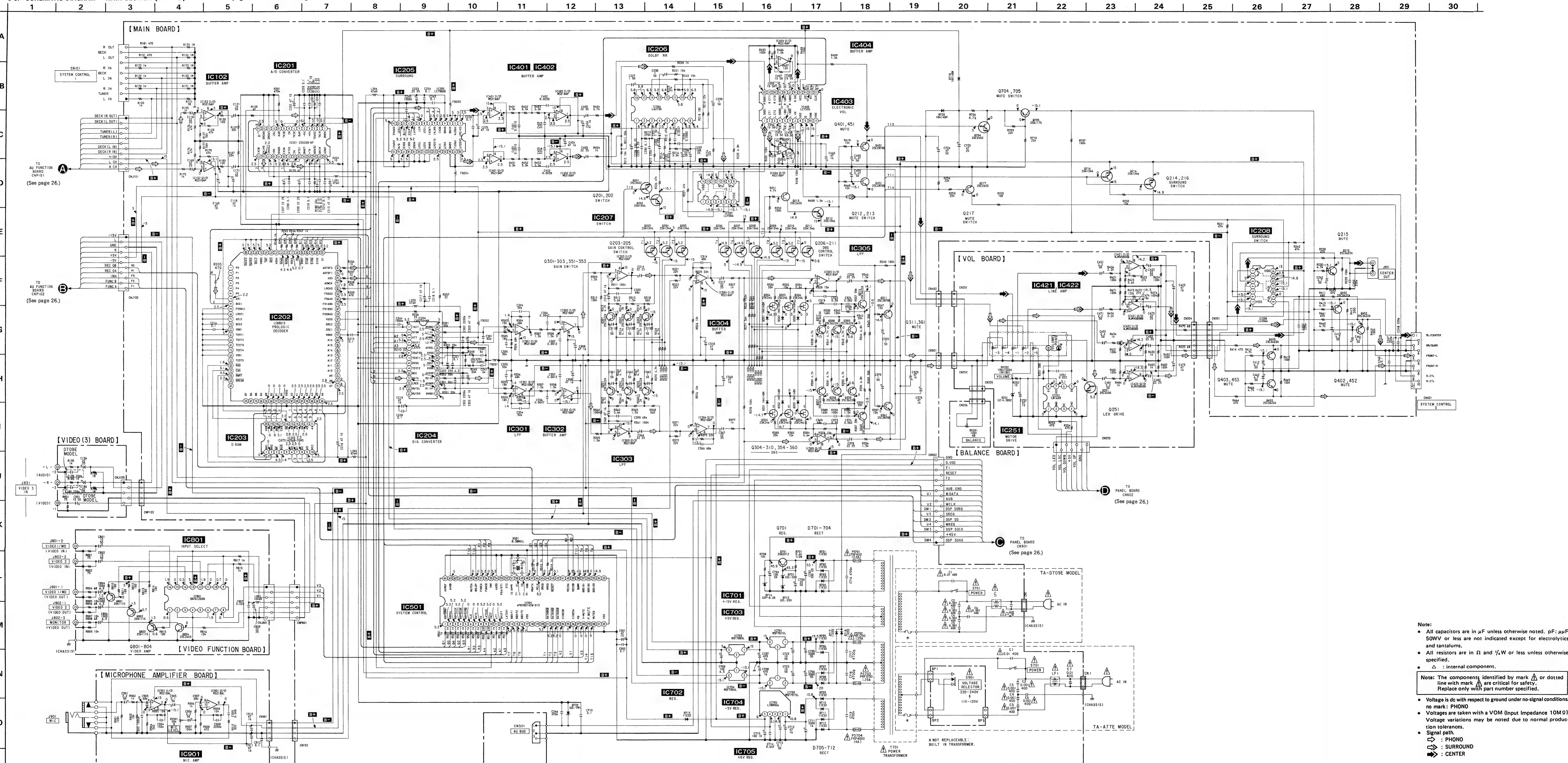
Note:

- : parts extracted from the component side.
- : Pattern on the side which is seen.
- : Jumper wire connected to the ground pattern on the component side.

3-5. PRINTED WIRING BOARDS—MAIN SECTION (TYPE I)— • Refer to page 8 for Semiconductor Lead Layouts.

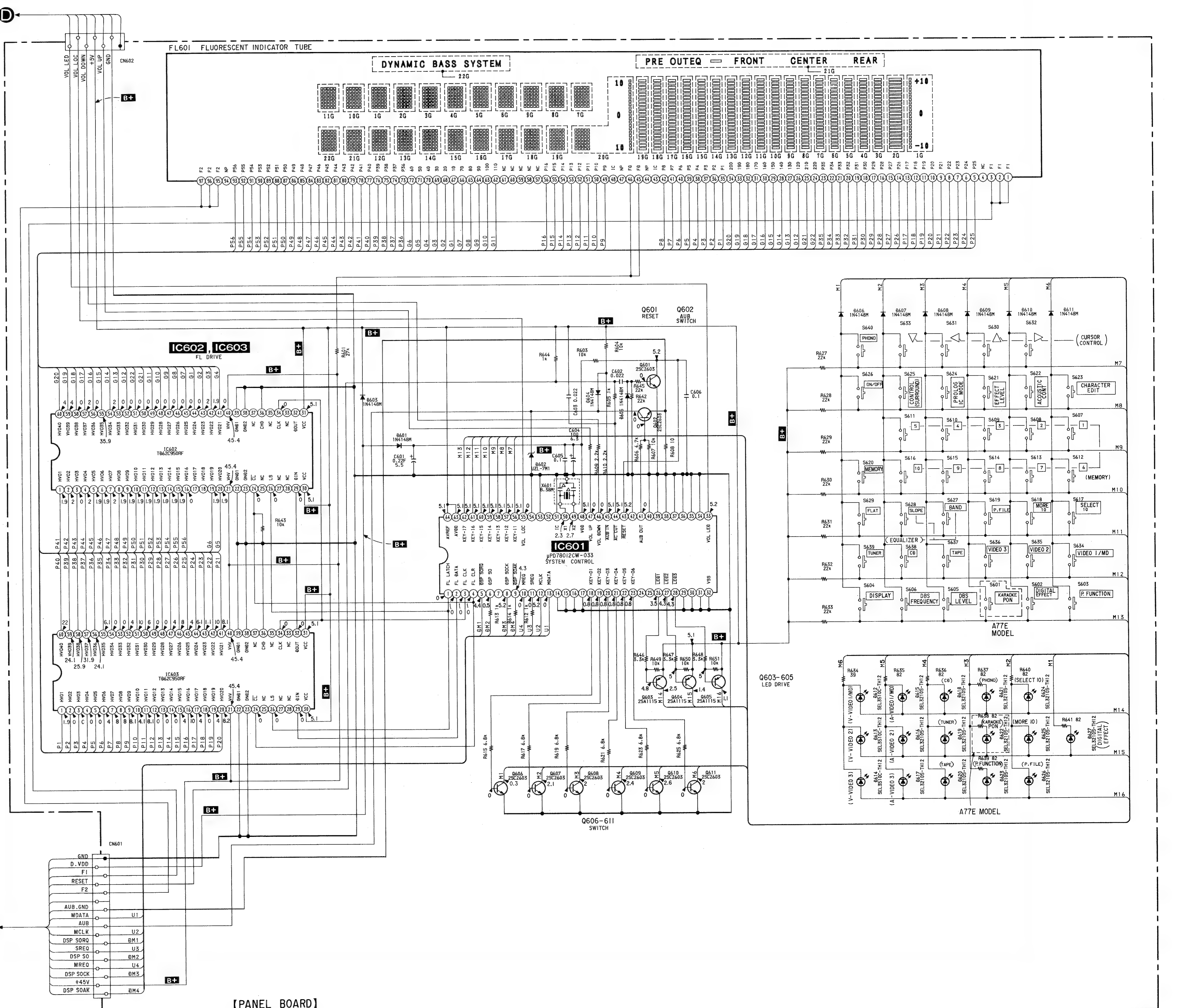
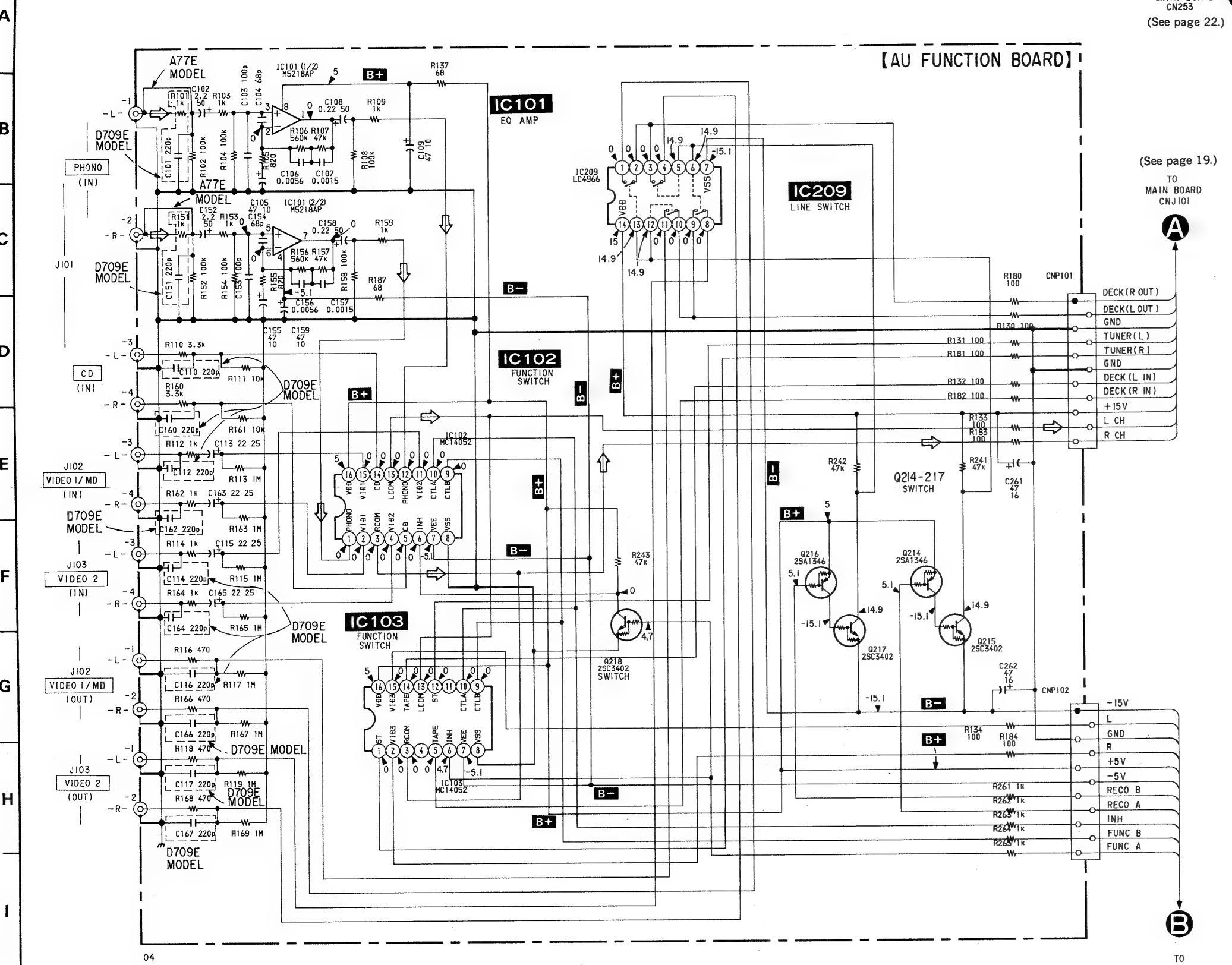


3-6. SCHEMATIC DIAGRAM —MAIN SECTION (TYPE 1)— Refer to page 9 for IC Block Diagrams.



3-7. SCHEMATIC DIAGRAM—PANEL SECTION (TYPE I)— Refer to page 9 for IC Block Diagrams.

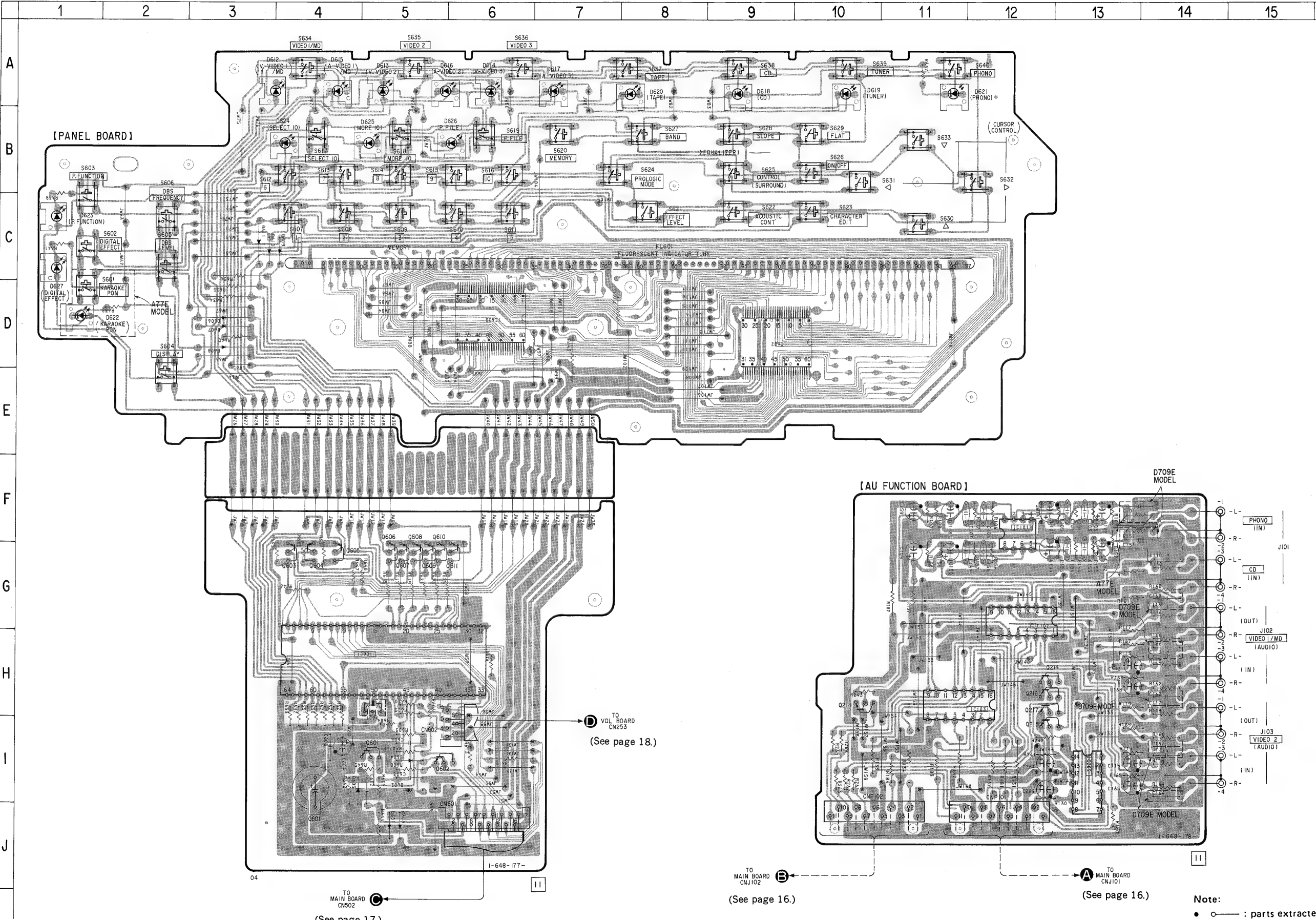
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29



Note:

- All capacitors are in μF unless otherwise noted. pF: μF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}\text{W}$ or less unless otherwise specified.
- Δ : internal component.
- Voltage is do with respect to ground under no-signal conditions. no mark: PHONO
- Voltages are taken with a VOM (input impedance 10M Ω). Voltage variations may be noted due to normal production tolerances.
- Signal path.
- \Rightarrow : PHONO

3-8. PRINTED WIRING BOARDS—PANEL SECTION (TYPE I) — • Refer to page 8 for Semiconductor Lead Layouts.



• Semiconductor Location

Ref. No.	Location
D601	J-5
D602	I-5
D603	J-5
D604	I-5
D605	I-4
D606	D-3
D607	D-3
D608	D-3
D609	C-4
D610	C-3
D611	C-3
D612	A-3
D613	A-5
D614	A-6
D615	A-4
D616	A-5
D617	A-7
D618	A-9
D619	A-10
D620	A-8
D621	A-11
(D622)	D-1
D623	C-1
D624	B-4
D625	B-5
D626	B-6
D627	C-1
IC101	F-12
IC102	G-12
IC103	H-11
IC209	I-13
IC601	H-5
IC602	D-9
IC603	D-6
Q214	H-12
Q215	I-12
Q216	H-12
Q217	H-12
Q218	H-10
Q601	I-5
Q602	I-5
Q603	G-4
Q604	G-4
Q605	G-4
Q606	G-5
Q607	G-5
Q608	G-5
Q609	G-5
Q610	G-5
Q611	G-6

(): TA-A77E only

• Semiconductor Location

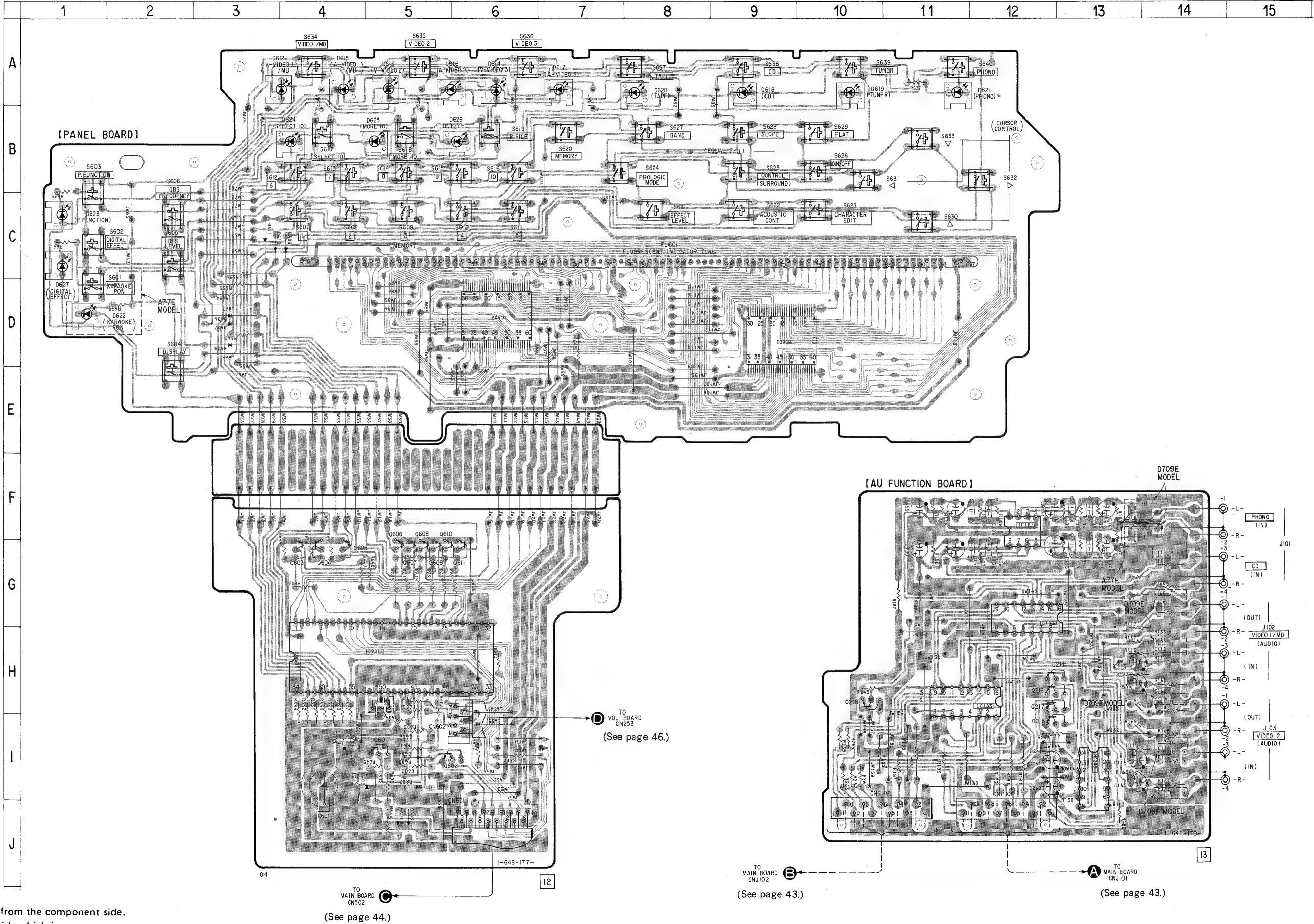
Ref. No.	Location
D601	J-5
D602	I-5
D603	J-5
D604	I-5
D605	I-4
D606	D-3
D607	D-3
D608	D-3
D609	C-4
D610	C-3
D611	C-3
D612	A-3
D613	A-5
D614	A-6
D615	A-4
D616	A-5
D617	A-7
D618	A-9
D619	A-10
D620	A-8
D621	A-11
(D622)	D-1
D623	C-1
D624	B-4
D625	B-5
D626	B-6
D627	C-1
IC101	F-12
IC102	G-12
IC103	H-11
IC209	I-13
IC601	H-5
IC602	D-9
IC603	D-6
Q214	H-12
Q215	I-12
Q216	H-12
Q217	H-12
Q218	H-10
Q601	I-5
Q602	I-5
Q603	G-4
Q604	G-4
Q605	G-4
Q606	G-5
Q607	G-5
Q608	G-5
Q609	G-5
Q610	G-5
Q611	G-6

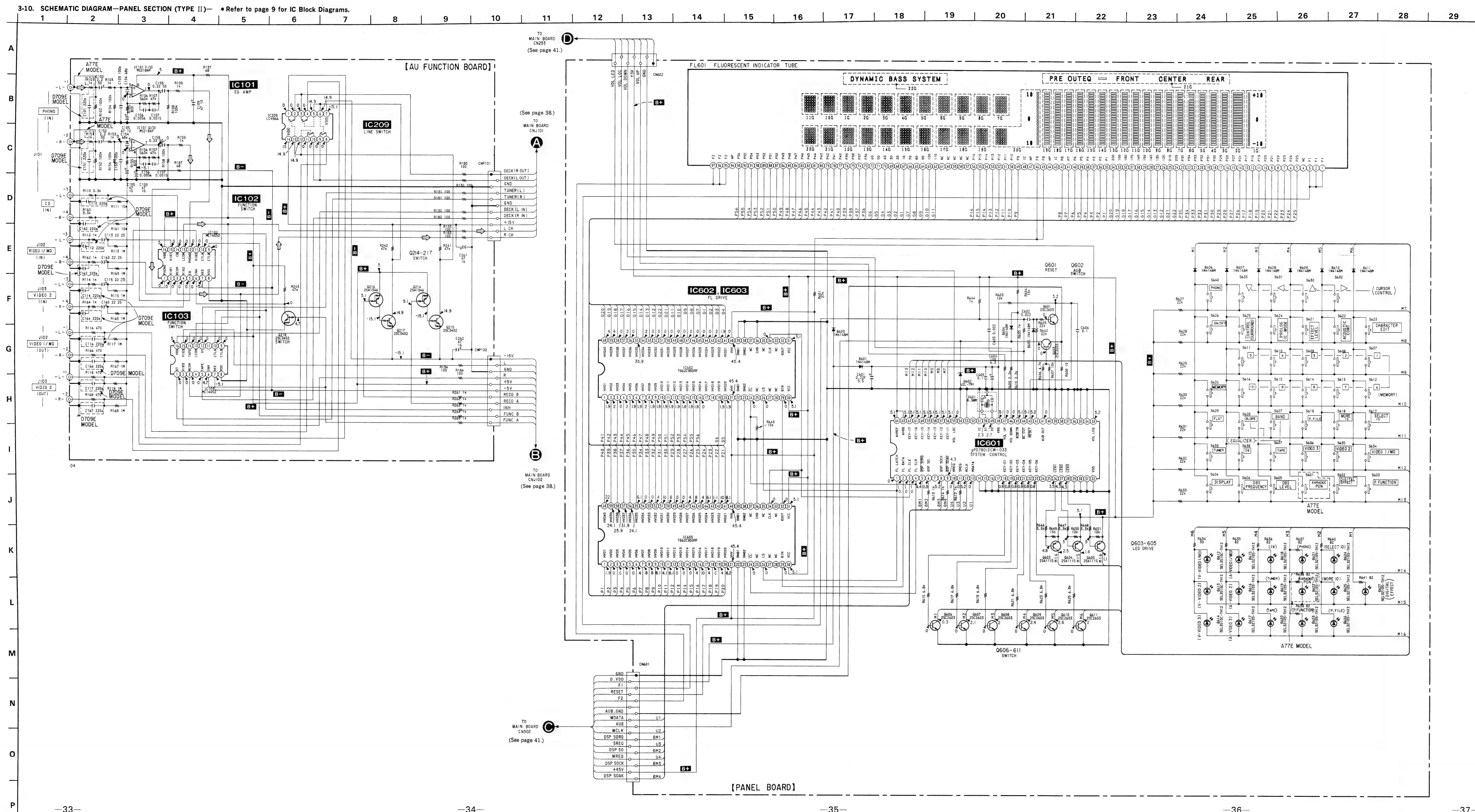
(): TA-A77E only

Note:

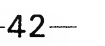
- — : parts extracted from the component side.
- : Pattern on the side which is seen.

3-9. PRINTED WIRING BOARDS—PANEL SECTION (TYPE II)— • Refer to page 8 for Semiconductor Lead Layouts.








- Note:
 - All capacitors are in μF unless otherwise noted, pF: μF 500W or less are not indicated except for electrolytics and tantalums.
 - All resistors are in Ω and $\frac{1}{2}\text{W}$ or less unless otherwise specified.
 - Δ : internal component.
 - Voltage is dc with respect to ground under no-signal conditions. no mark : PHONO
 - Voltages are taken with a VOM (input impedance 10M Ω). Voltage variations may be noted due to normal production tolerances.
 - Signal path
 - ➞ : PHONO





Note:

-  : parts extracted from the component side.
-  : Pattern on the side which is seen.
-  : Jumper wire connected to the ground pattern on the component side.

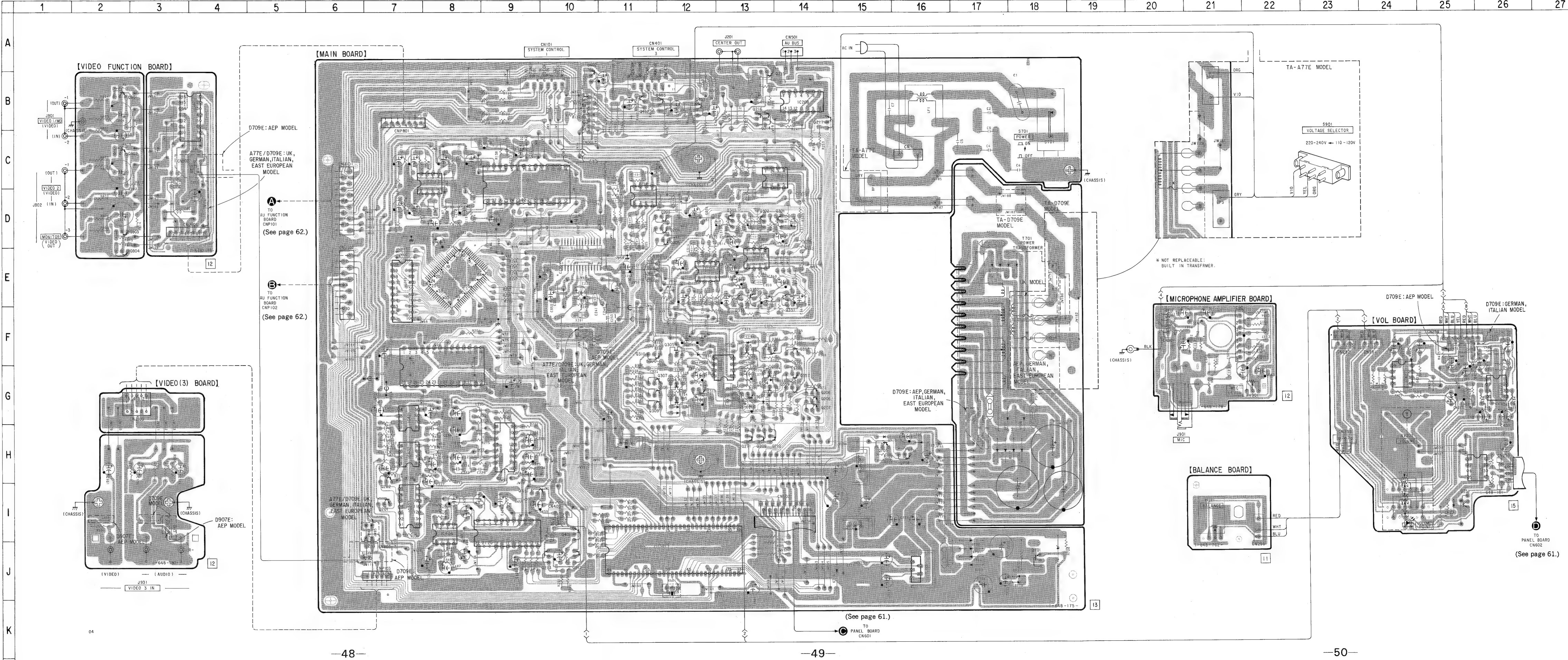
3-13. PRINTED WIRING BOARDS—MAIN SECTION (TYPE III)— • Refer to page 8 for Semiconductor Lead Layouts.

• Semiconductor Location

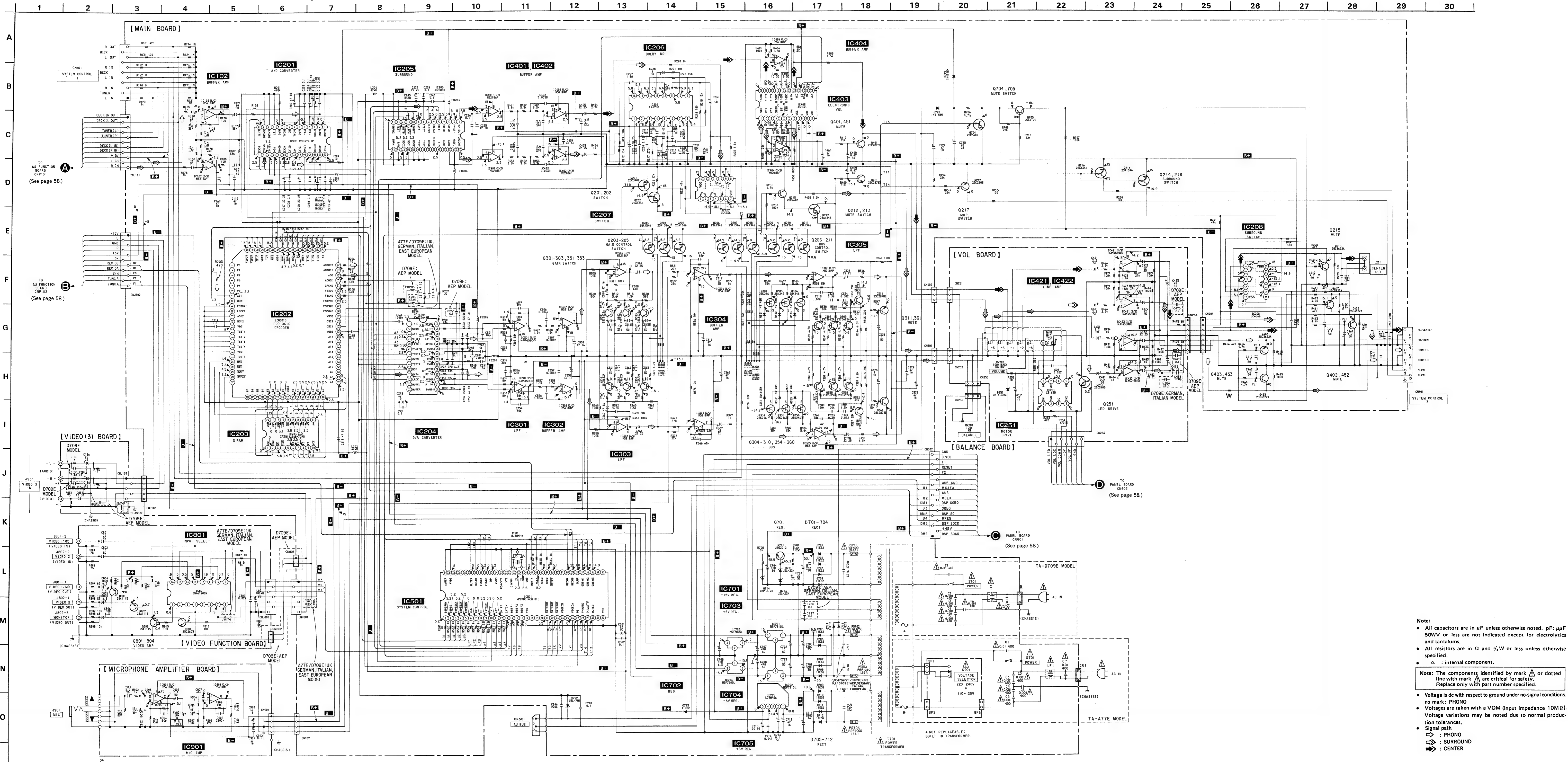
Ref. No.	Location	Ref. No.	Location
D251	I-25	IC801	B-3
D301	G-12	IC901	F-21
D302	F-12		
D303	G-12	Q201	I-7
D351	G-13	Q202	H-7
D352	F-13	Q203	D-12
D353	G-13	Q204	D-12
D701	J-17	Q205	D-12
D702	J-17	Q206	G-14
D703	J-17	Q207	G-14
D704	J-17	Q208	G-14
D705	H-17	Q209	H-13
D706	H-18	Q210	H-13
D707	G-17	Q211	H-13
D708	G-18	Q212	J-10
D709	E-17	Q213	J-10
D710	E-17	Q214	B-13
D711	E-17	Q215	B-13
D712	E-18	Q216	B-13
D713	J-18	Q217	B-14
D714	J-18	Q251	I-25
D715	J-14	Q301	D-14
D717	H-17	Q302	D-13
D718	H-17	Q303	D-13
D719	H-15	Q304	G-12
D720	H-16	Q305	F-12
D721	J-18	Q306	G-12
D722	B-14	Q307	G-11
		Q308	G-11
IC102	C-8	Q309	G-11
IC201	C-9	Q310	F-11
IC202	E-8	Q311	G-12
IC203	E-7	Q351	E-14
IC204	E-10	Q352	E-13
IC205	G-8	Q353	E-13
IC206	H-9	Q354	G-13
IC207	I-7	Q355	F-13
IC208	B-14	Q356	G-13
IC251	H-25	Q357	G-14
IC301	D-11	Q358	F-14
IC302	C-13	Q359	G-14
IC303	E-13	Q360	F-13
IC304	E-12	Q361	G-13
IC305	G-13	Q401	I-10
IC401	G-7	Q402	B-10
IC402	H-7	Q403	B-12
IC403	I-9	Q451	I-9
IC404	I-8	Q452	B-11
IC421	G-24	Q453	B-12
IC422	G-26	Q701	J-18
IC501	J-12	Q704	H-16
IC701	H-15	Q705	H-15
IC702	I-15	Q801	B-2
IC703	H-11	Q802	C-2
IC704	C-9	Q803	D-2
IC705	J-16	Q804	E-2

Note:

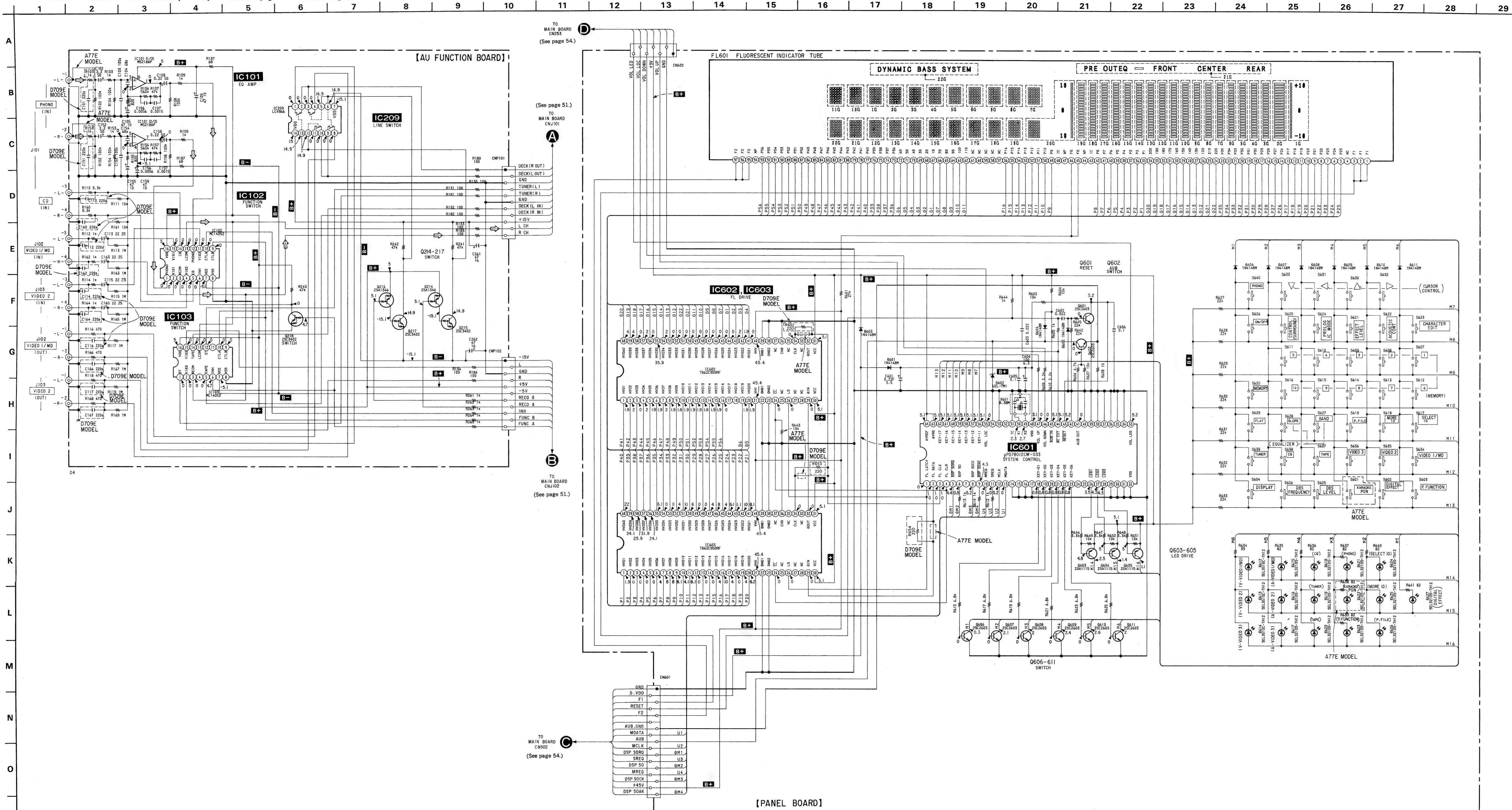
- — : parts extracted from the component side.
- : Pattern on the side which is seen.
- — : Jumper wire connected to the ground pattern on the component side.



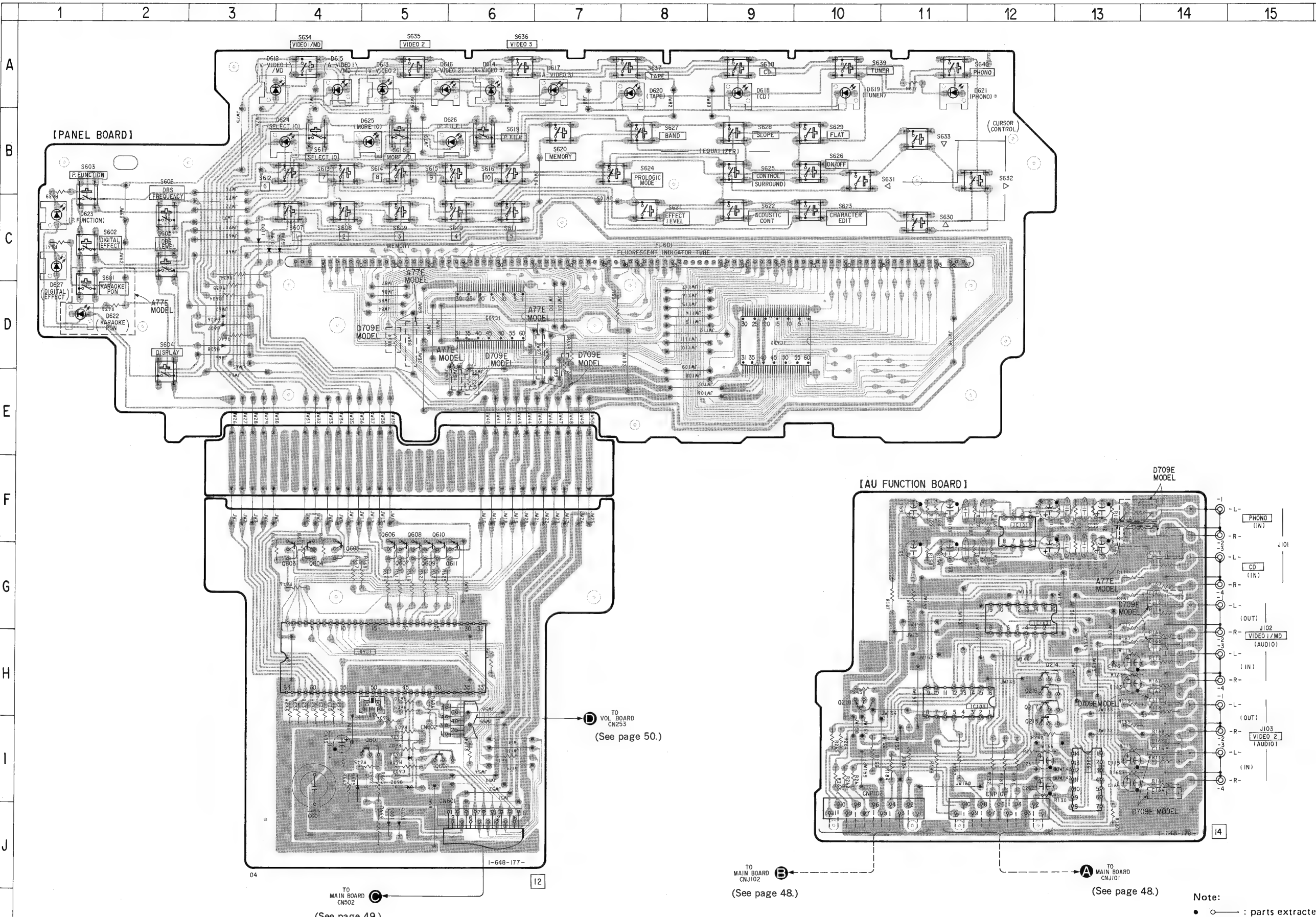
3-14. SCHEMATIC DIAGRAM—MAIN SECTION (TYPE III) — • Refer to page 9 for IC Block Diagrams.



3-15. SCHEMATIC DIAGRAM—PANEL SECTION (TYPE III)— • Refer to page 9 for IC Block Diagrams.



3-16. PRINTED WIRING BOARDS—PANEL SECTION (TYPE III)— • Refer to page 8 for Semiconductor Lead Layouts.



• Semiconductor Location

Ref. No.	Location
D601	J-5
D602	I-5
D603	J-5
D604	I-5
D605	I-4
D606	D-3
D607	D-3
D608	D-3
D609	C-4
D610	C-3
D611	C-3
D612	A-3
D613	A-5
D614	A-6
D615	A-4
D616	A-5
D617	A-7
D618	A-9
D619	A-10
D620	A-8
D621	A-11
(D622)	D-1
D623	C-1
D624	B-4
D625	B-5
D626	B-6
D627	C-1
IC101	F-12
IC102	G-12
IC103	H-11
IC209	I-13
IC601	H-5
IC602	D-9
IC603	D-6
Q214	H-12
Q215	I-12
Q216	H-12
Q217	H-12
Q218	H-10
Q601	I-5
Q602	I-5
Q603	G-4
Q604	G-4
Q605	G-4
Q606	G-5
Q607	G-5
Q608	G-5
Q609	G-5
Q610	G-5
Q611	G-6

(): TA-A77E only

● Semiconductor Location

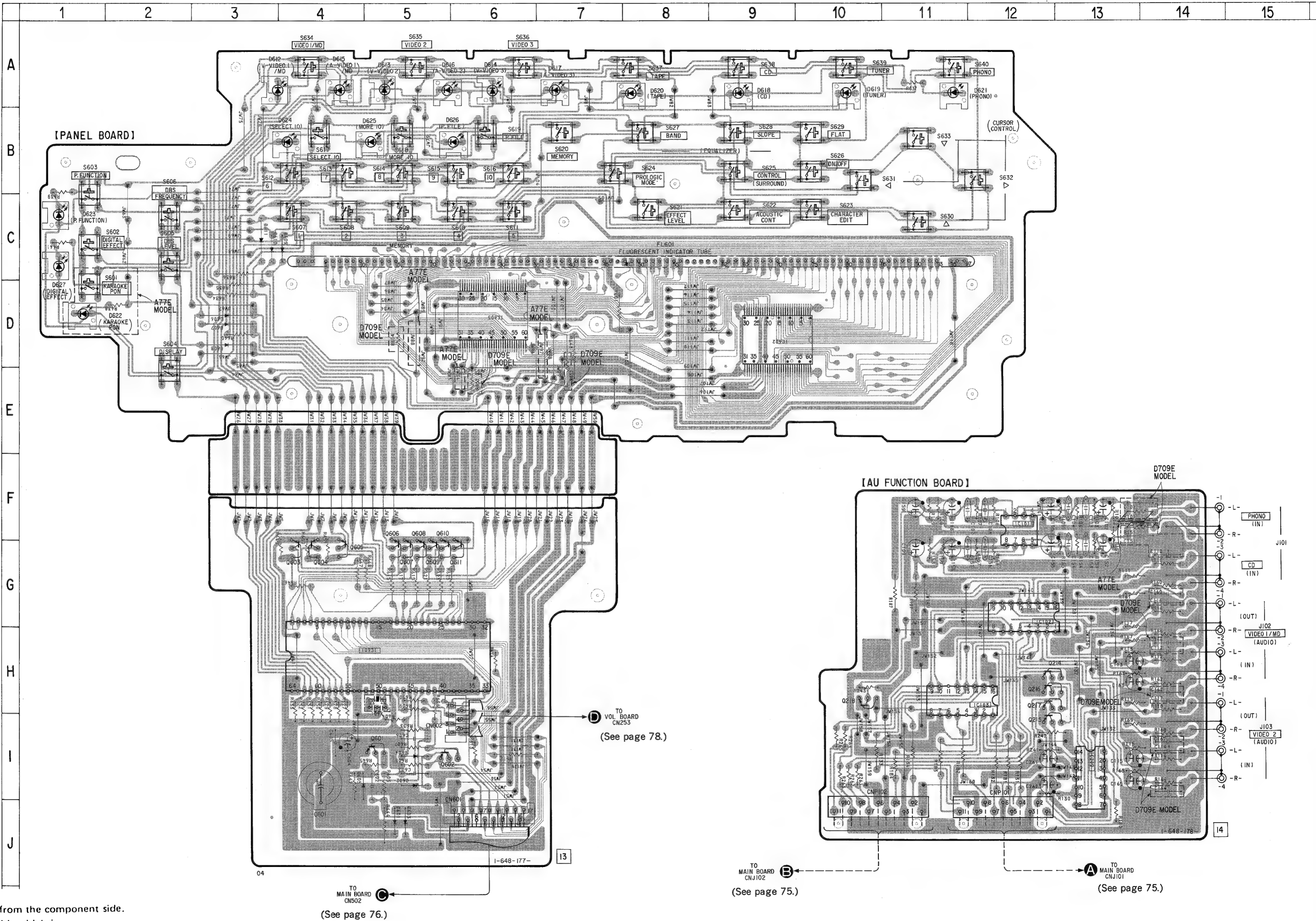
Ref. No.	Location
D601	J-5
D602	I-5
D603	J-5
D604	I-5
D605	I-4
D606	D-3
D607	D-3
D608	D-3
D609	C-4
D610	C-3
D611	C-3
D612	A-3
D613	A-5
D614	A-6
D615	A-4
D616	A-5
D617	A-7
D618	A-9
D619	A-10
D620	A-8
D621	A-11
(D622)	D-1
D623	C-1
D624	B-4
D625	B-5
D626	B-6
D627	C-1
IC101	F-12
IC102	G-12
IC103	H-11
IC209	I-13
IC601	H-5
IC602	D-9
IC603	D-6
Q214	H-12
Q215	I-12
Q216	H-12
Q217	H-12
Q218	H-10
Q601	I-5
Q602	I-5
Q603	G-4
Q604	G-4
Q605	G-4
Q606	G-5
Q607	G-5
Q608	G-5
Q609	G-5
Q610	G-5
Q611	G-6

(): TA-A77E only

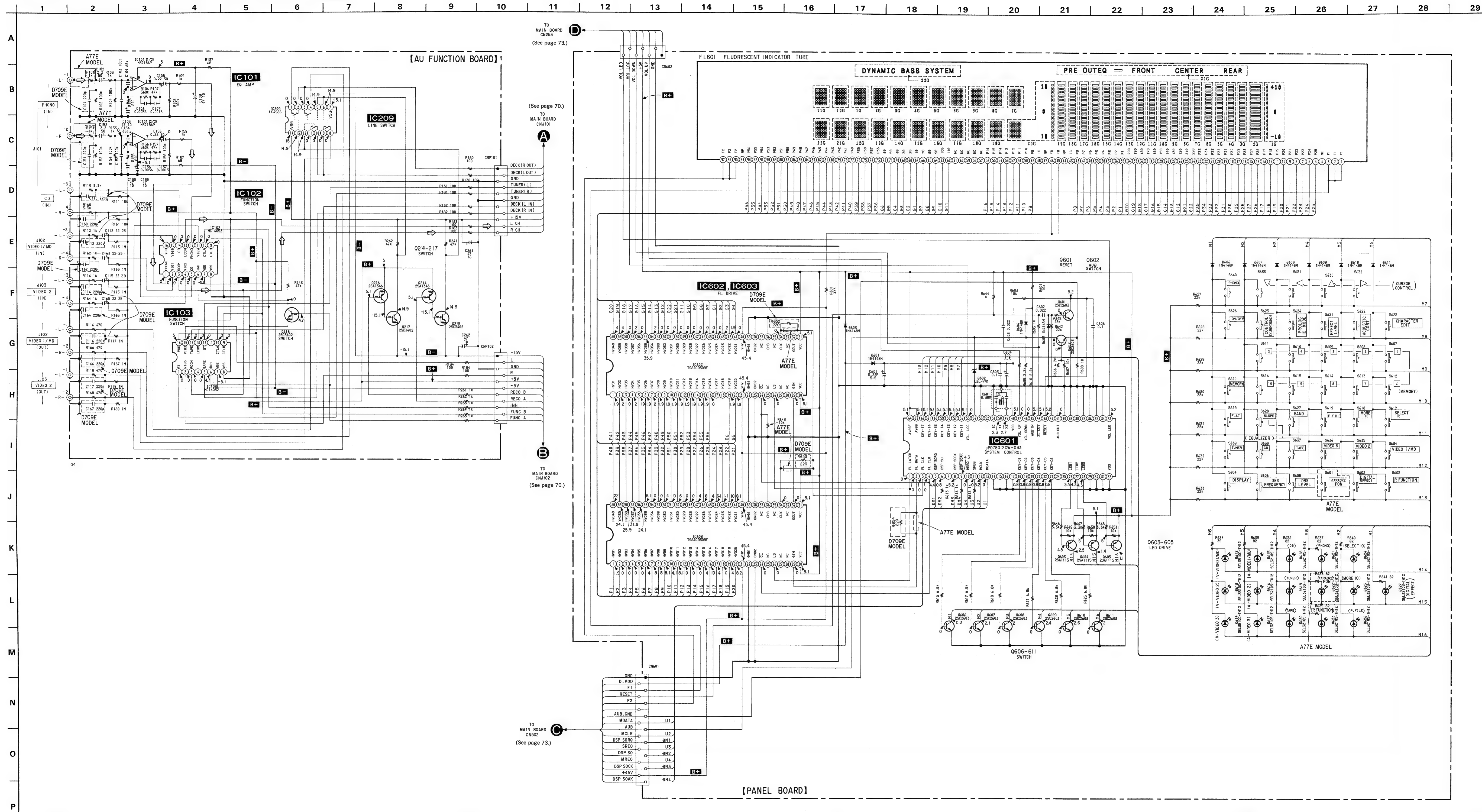
Note:

- : parts extracted from the component side.
- : Pattern on the side which is seen.

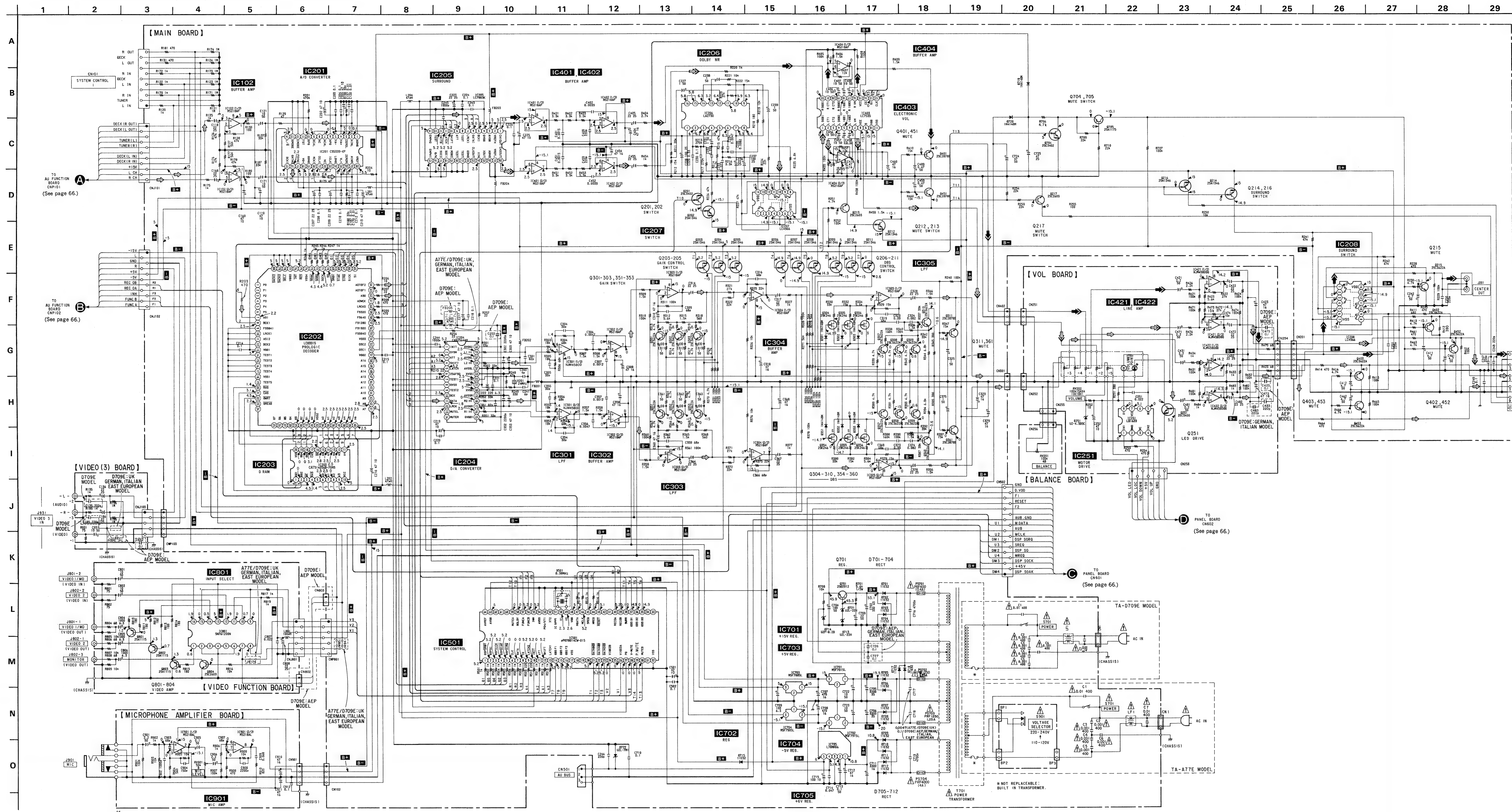
3-17. PRINTED WIRING BOARDS—PANEL SECTION (TYPE IV) — ● Refer to page 8 for Semiconductor Lead Layouts.



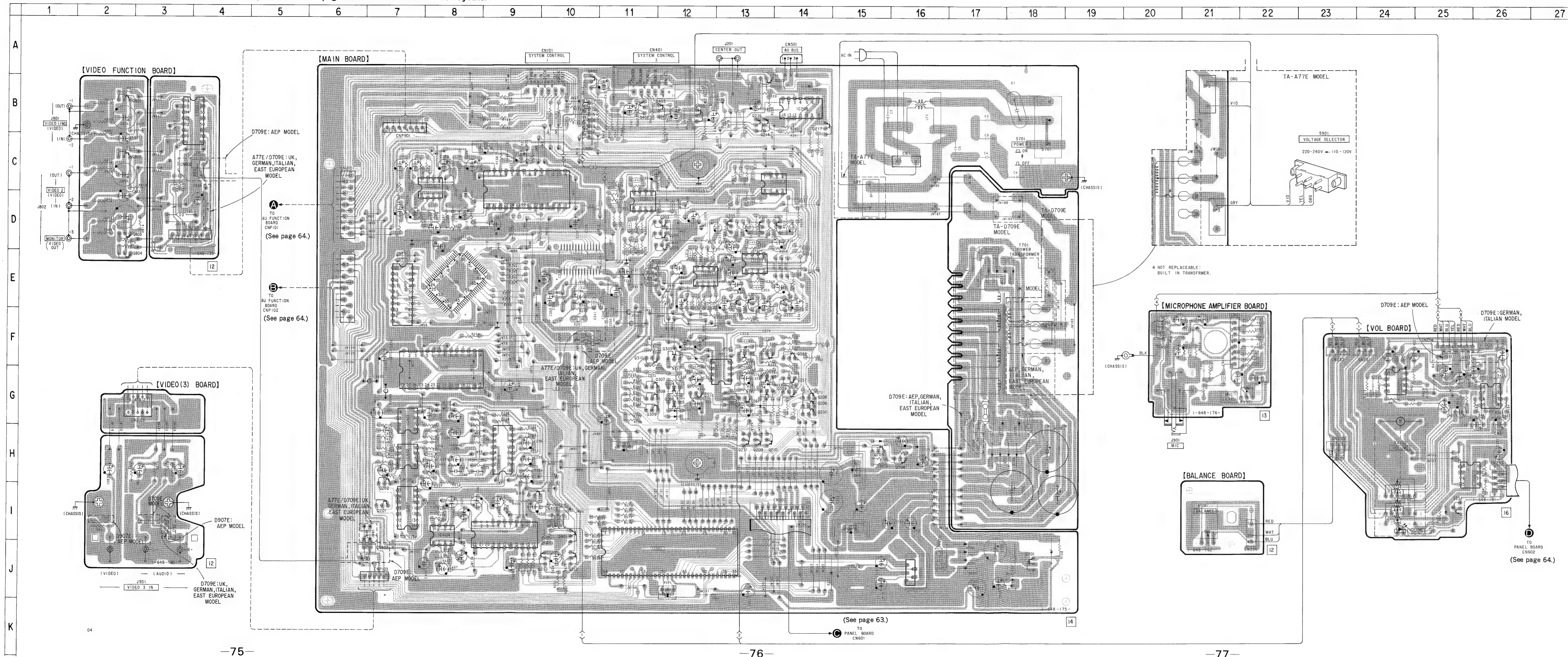
3-18. SCHEMATIC DIAGRAM—PANEL SECTION (TYPE IV)— Refer to page 9 for IC Block Diagrams.



3-19. SCHEMATIC DIAGRAM—MAIN SECTION (TYPE IV)— • Refer to page 9 for IC Block Diagrams.




3-20. PRINTED WIRING BOARDS—MAIN SECTION (TYPE IV)— • Refer to page 8 for Semiconductor Lead Layouts.



- **Semiconductor Location**

Ref. No.	Location	Ref. No.	Location
D251	I-25	IC801	B-3
D301	G-12	IC901	F-21
D302	F-12		
D303	G-12	Q201	I-7
D351	G-13	Q202	H-7
D352	F-13	Q203	D-12
D353	G-13	Q204	D-12
D701	J-17	Q205	D-12
D702	J-17	Q206	G-14
D703	J-17	Q207	G-14
D704	J-17	Q208	G-14
D705	H-17	Q209	H-13
D706	H-18	Q210	H-13
D707	G-17	Q211	H-13
D708	G-18	Q212	J-10
D709	E-17	Q213	J-10
D710	E-17	Q214	B-13
D711	E-17	Q215	B-13
D712	E-18	Q216	B-13
D713	J-18	Q217	B-14
D714	J-18	Q251	I-25
D715	J-14	Q301	D-14
D717	H-17	Q302	D-13
D718	H-17	Q303	D-13
D719	H-15	Q304	G-12
D720	H-16	Q305	F-12
D721	J-18	Q306	G-12
D722	B-14	Q307	G-11
		Q308	G-11
IC102	C-8	Q309	G-11
IC201	C-9	Q310	F-11
IC202	E-8	Q311	G-12
IC203	E-7	Q351	E-14
IC204	E-10	Q352	E-13
IC205	G-8	Q353	E-13
IC206	H-9	Q354	G-13
IC207	I-7	Q355	F-13
IC208	B-14	Q356	G-13
IC251	H-25	Q357	G-14
IC301	D-11	Q358	F-14
IC302	C-13	Q359	G-14
IC303	E-13	Q360	F-13
IC304	E-12	Q361	G-13
IC305	G-13	Q401	I-10
IC401	G-7	Q402	B-10
IC402	H-7	Q403	B-12
IC403	I-9	Q451	I-9
IC404	I-8	Q452	B-11
IC421	G-24	Q453	B-12
IC422	G-26	Q701	J-18
IC501	J-12	Q704	H-16
IC701	H-15	Q705	H-15
IC702	I-15	Q801	B-2
IC703	H-11	Q802	C-2
IC704	C-9	Q803	D-2
IC705	J-16	Q804	E-2

Note:

- ○ — : parts extracted from the component side.
- ■ : Pattern on the side which is seen.
- ○ —  : Jumper wire connected to the ground pattern on the component side.

SECTION 4 EXPLODED VIEWS

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts

Example :

KNOB, BALANCE (WHITE)... (RED)

↑ ↑
Parts Color Cabinet's Color

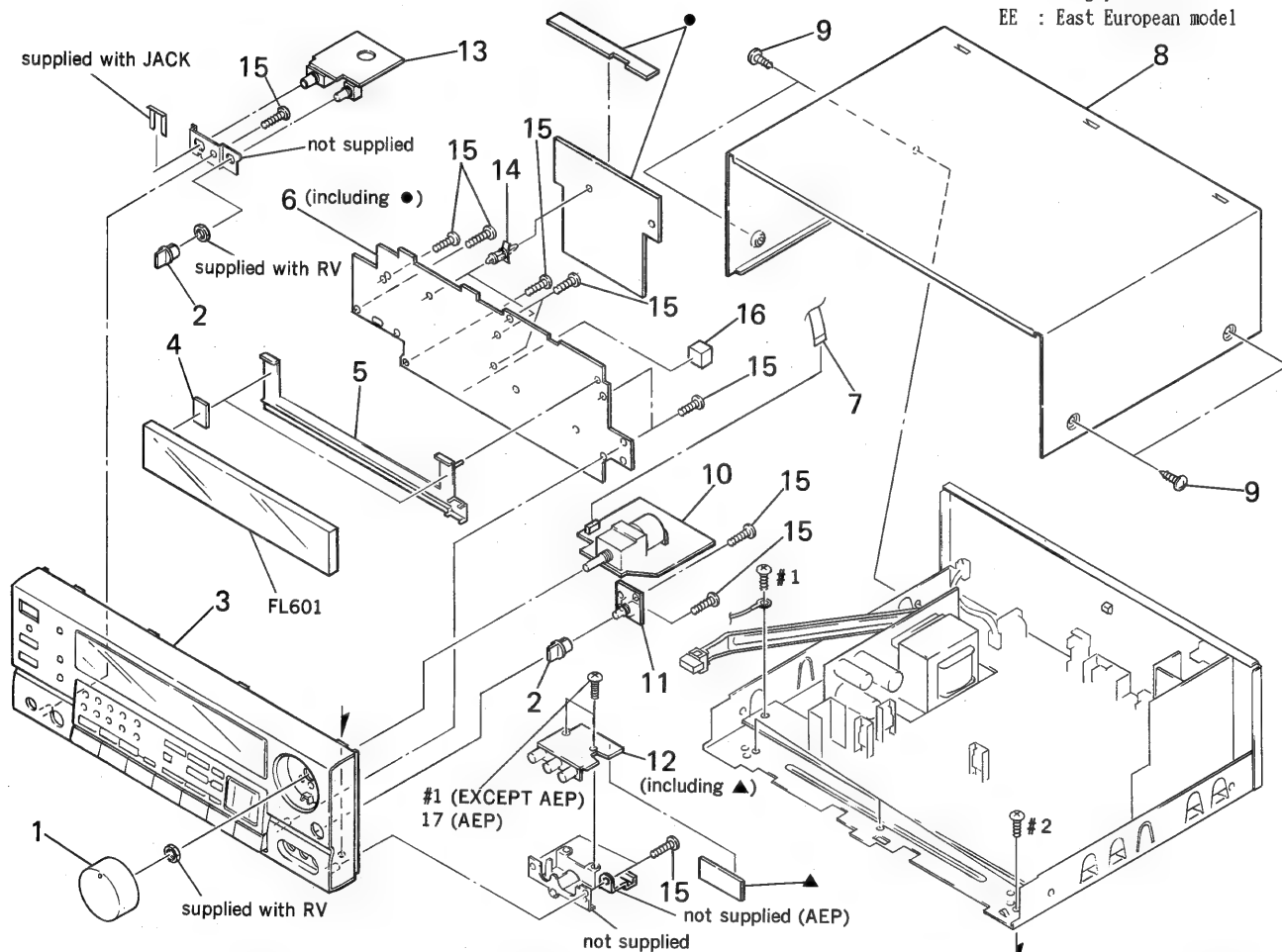
- Hardware (# mark) list is given in the last of this parts list.

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

● Abbreviations

G : German model
IT : Italian model
AUS : Australian model
JE : Tourist model
EA : Saudi Arabia model
MY : Malaysia model
SP : Singapore model
EE : East European model

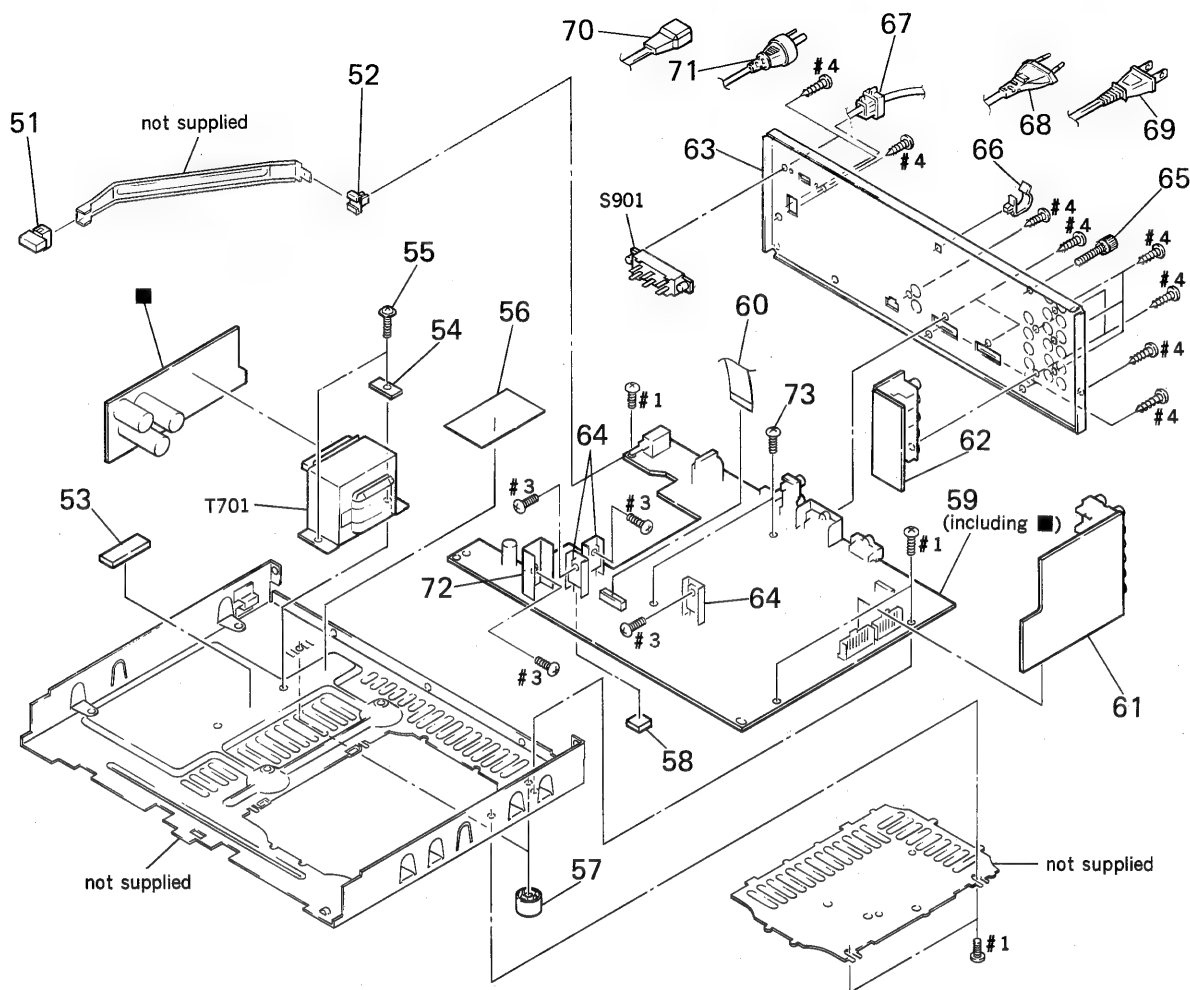
4-1. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	X-4943-445-1	KNOB (VOL.) ASSY		* 10	A-4360-773-A	VOL BOARD, COMPLETE (TA-A77E/TA-D709E:UK, EE)	
2	4-950-652-11	KNOB (DIA. 12), ROUND		* 10	A-4365-532-A	VOL BOARD, COMPLETE (TA-D709E:AEP)	
3	X-4943-564-1	PANEL ASSY, FRONT (TA-D709E)		* 10	A-4365-533-A	VOL BOARD, COMPLETE (TA-D709E:G, IT)	
3	X-4943-565-1	PANEL ASSY, FRONT (TA-A77E)		* 11	1-648-762-11	BALANCE BOARD	
* 4	4-934-853-01	CUSHION		* 12	1-648-180-11	VIDEO (3) BOARD	
* 5	4-957-917-01	HOLDER, FL TUBE		* 13	1-648-176-11	MICROPHONE AMPLIFIER BOARD	
* 6	A-4360-769-A	PANEL BOARD, COMPLETE (TA-D709E)		14	4-924-098-91	HOLDER, PC BOARD	
* 6	A-4360-952-A	PANEL BOARD, COMPLETE (TA-A77E)		15	4-951-620-01	SCREW (2.6X8), +BVTP	
7	1-690-420-11	WIRE, FLAT TYPE (7 CORE) (TA-D709E:EE)		16	4-608-466-01	SPACER	
7	1-690-635-11	WIRE, FLAT TYPE (7 CORE) (TA-A77E/TA-D709E:AEP, UK, G, IT)		17	4-886-821-11	SCREW, S TIGHT, +PTTWH 3X6 (TA-D709E:AEP)	
* 8	4-939-803-31	CASE		FL601	1-517-167-11	INDICATOR TUBE, FLUORESCENT	
9	3-363-099-01	SCREW (CASE 3 TP2)					

4-2. CHASSIS SECTION

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.



Ref. No.	Part No.	Description	Remark
51	4-942-061-11	BUTTON (P)	
52	4-866-342-00	JOINT (B), KNOB	
* 53	4-931-174-01	SPACER	
54	4-946-540-01	WASHER (SQUARE)	
55	4-946-541-01	SCREW (4X8), +PWHIT	
* 56	4-945-761-11	SHEET (INSULATING)	
57	4-931-169-01	FOOT	
58	9-911-841-XX	CUSHION	
* 59	A-4360-765-A	MAIN BOARD, COMPLETE (TA-D709E:G, IT, EE)	
* 59	A-4360-766-A	MAIN BOARD, COMPLETE (TA-A77E)	
* 59	A-4360-768-A	MAIN BOARD, COMPLETE (TA-D709E:UK)	
* 59	A-4365-527-A	MAIN BOARD, COMPLETE (TA-D709E:AEP)	
60	1-751-486-11	WIRE (FLAT TYPE) (17 CORE)	
* 61	A-4360-770-A	AU FUNCTION BOARD, COMPLETE (TA-A77E)	
* 61	A-4360-774-A	AU FUNCTION BOARD, COMPLETE (TA-D709E:UK, G, IT, EE)	
* 61	A-4365-529-A	AU FUNCTION BOARD, COMPLETE (TA-D709E:AEP)	
* 62	A-4360-771-A	VIDEO FUNCTION BOARD, COMPLETE (TA-A77E/TA-D709E:UK, G, IT, EE)	
* 62	A-4365-530-A	VIDEO FUNCTION BOARD, COMPLETE (TA-D709E:AEP)	

Ref. No.	Part No.	Description	Remark
* 63	4-957-918-01	PANEL (B3120), BACK (TA-D709E:AEP, IT, EE)	
* 63	4-957-918-11	PANEL (B3120), BACK (TA-D709E:AEP)	
* 63	4-957-918-21	PANEL (B3120), BACK (TA-D709E:UK)	
* 63	4-957-918-31	PANEL (B3120), BACK (TA-D709E:G)	
* 63	4-957-918-41	PANEL (B3120), BACK (TA-A77E:E, AUS, JE)	
* 63	4-957-918-51	PANEL (B3120), BACK (TA-A77E:EA, MY, SP)	
* 64	3-309-144-21	HEAT SINK	
65	4-947-010-01	SCREW, FEEDER FIXED	
* 66	4-949-235-01	HOOK	
* 67	3-703-244-00	BUSHING (2104), CORD (TA-A77E:EA, AUS, MY, SP/TA-D709E)	
* 67	3-703-571-11	BUSHING (S) (4516), CORD (TA-A77E:E, JE)	
Δ 68	1-575-654-11	CORD, POWER (TA-A77E:EA, MY, SP/TA-D709E:AEP, G, IT, EE)	
Δ 69	1-575-656-11	CORD, POWER (TA-A77E:E, JE)	
Δ 70	1-575-669-21	CORD, POWER (TA-D709E:UK)	
Δ 71	1-751-355-11	CORD, POWER (TA-A77E:AUS)	
* 72	4-880-403-11	HEAT SINK	
73	3-704-515-21	SCREW (BV/RING)	
Δ S901	1-570-046-21	SWITCH, VOLTAGE CHANGE (VOLTAGE SELECTOR) (TA-A77E)	
Δ T701	1-423-671-11	TRANSFORMER, POWER (TA-D709E)	
Δ T701	1-423-672-11	TRANSFORMER, POWER (TA-A77E)	

SECTION 5 ELECTRICAL PARTS LIST

AU FUNCTION

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
All resistors are in ohms.
METAL: Metal-film resistor.
METAL OXIDE: Metal oxide-film resistor.
F: nonflammable

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
In each case, u: μ , for example:
uA...: μ A... uPA...: μ PA...
uPB...: μ PB... uPC...: μ PC... uPD...: μ PD...
- CAPACITORS
uF: μ F
- COILS
uH: μ H

When indicating parts by reference number, please include the board.

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

- Abbreviations
G : German model
IT : Italian model
AUS : Australian model
JE : Tourist model
EA : Saudi Arabia model
MY : Malaysia model
SP : Singapore model
EE : East European model

Ref. No.	Part No.	Description	Remark
*	A-4360-770-A	AU FUNCTION BOARD, COMPLETE (TA-A77E)	
*	A-4360-774-A	AU FUNCTION BOARD, COMPLETE (TA-D709E:UK, G, IT, EE)	
*	A-4365-529-A	AU FUNCTION BOARD, COMPLETE (TA-D709E:AEP)	

< CAPACITOR >			
C101	1-162-286-31	CERAMIC 220PF 10% 50V (TA-D709E)	
C102	1-126-161-11	ELECT 2.2uF 20% 50V	
C103	1-164-070-11	CERAMIC 100PF 5% 50V	
C104	1-164-066-11	CERAMIC 68PF 5% 50V	
C105	1-126-022-11	ELECT 47uF 20% 10V	
C106	1-130-480-00	MYLAR 0.0056uF 5% 50V	
C107	1-130-473-00	MYLAR 0.0015uF 5% 50V	
C108	1-124-464-11	ELECT 0.22uF 20% 50V	
C109	1-126-022-11	ELECT 47uF 20% 10V	
C110	1-162-286-31	CERAMIC 220PF 10% 50V (TA-D709E)	
C112	1-162-286-31	CERAMIC 220PF 10% 50V (TA-D709E)	
C113	1-126-049-11	ELECT 22uF 20% 25V	
C114	1-162-286-31	CERAMIC 220PF 10% 50V (TA-D709E)	
C115	1-126-049-11	ELECT 22uF 20% 25V	
C116	1-162-286-31	CERAMIC 220PF 10% 50V (TA-D709E)	
C117	1-162-286-31	CERAMIC 220PF 10% 50V (TA-D709E)	
C151	1-162-286-31	CERAMIC 220PF 10% 50V (TA-D709E)	
C152	1-126-161-11	ELECT 2.2uF 20% 50V	
C153	1-164-070-11	CERAMIC 100PF 5% 50V	
C154	1-164-066-11	CERAMIC 68PF 5% 50V	
C155	1-126-022-11	ELECT 47uF 20% 10V	
C156	1-130-480-00	MYLAR 0.0056uF 5% 50V	
C157	1-130-473-00	MYLAR 0.0015uF 5% 50V	
C158	1-124-464-11	ELECT 0.22uF 20% 50V	
C159	1-126-022-11	ELECT 47uF 20% 10V	
C160	1-162-286-31	CERAMIC 220PF 10% 50V (TA-D709E)	

Ref. No.	Part No.	Description	Remark
C162	1-162-286-31	CERAMIC 220PF 10% 50V (TA-D709E)	
C163	1-126-049-11	ELECT 22uF 20% 25V	
C164	1-162-286-31	CERAMIC 220PF 10% 50V (TA-D709E)	
C165	1-126-049-11	ELECT 22uF 20% 25V	
C166	1-162-286-31	CERAMIC 220PF 10% 50V (TA-D709E)	
C167	1-162-286-31	CERAMIC 220PF 10% 50V (TA-D709E)	
C261	1-126-022-11	ELECT 47uF 20% 16V	
C262	1-126-022-11	ELECT 47uF 20% 16V	
< CONNECTOR >			
*	CNP101	1-573-979-11 CONNECTOR, BOARD TO BOARD 11P	
*	CNP102	1-573-979-11 CONNECTOR, BOARD TO BOARD 11P	
< IC >			
IC101	8-759-636-74	IC M5218AP-22	
IC102	8-759-000-48	IC MC14052BCP	
IC103	8-759-000-48	IC MC14052BCP	
IC209	8-759-801-01	IC LC4966	
< JACK >			
J101	1-573-520-11	JACK, PIN 4P (PHONO/CD)	
J102	1-573-520-11	JACK, PIN 4P (VIDEO 1/MD)	
J103	1-573-520-11	JACK, PIN 4P (VIDEO 2)	
< TRANSISTOR >			
Q214	8-729-900-63	TRANSISTOR DTA124ES	
Q215	8-729-900-80	TRANSISTOR DTC114ES	
Q216	8-729-900-63	TRANSISTOR DTA124ES	
Q217	8-729-900-80	TRANSISTOR DTC114ES	
Q218	8-729-900-80	TRANSISTOR DTC114ES	
< RESISTOR >			
R101	1-249-417-11	CARBON 1K 5% 1/4W (TA-D709E)	
R102	1-249-441-11	CARBON 100K 5% 1/4W	
R103	1-249-417-11	CARBON 1K 5% 1/4W	
R104	1-249-441-11	CARBON 100K 5% 1/4W	
R105	1-249-416-11	CARBON 820 5% 1/4W	

AU FUNCTION

BALANCE

MAIN

Ref. No.	Part No.	Description	Remark
R106	1-247-897-11	CARBON 560K 5% 1/4W	
R107	1-249-437-11	CARBON 47K 5% 1/4W	
R108	1-249-441-11	CARBON 100K 5% 1/4W	
R109	1-249-417-11	CARBON 1K 5% 1/4W	
R110	1-249-423-11	CARBON 3.3K 5% 1/4W	
R111	1-249-429-11	CARBON 10K 5% 1/4W	
R112	1-249-417-11	CARBON 1K 5% 1/4W	
R113	1-247-903-00	CARBON 1M 5% 1/4W	
R114	1-249-417-11	CARBON 1K 5% 1/4W	
R115	1-247-903-00	CARBON 1M 5% 1/4W	
R116	1-249-413-11	CARBON 470 5% 1/4W	
R117	1-247-903-00	CARBON 1M 5% 1/4W	
R118	1-249-413-11	CARBON 470 5% 1/4W	
R119	1-247-903-00	CARBON 1M 5% 1/4W	
R130-134	1-247-807-31	CARBON 100 5% 1/4W	
R137	1-249-403-11	CARBON 68 5% 1/4W	
R151	1-249-417-11	CARBON 1K 5% 1/4W	
	(TA-D709E)		
R152	1-249-441-11	CARBON 100K 5% 1/4W	
R153	1-249-417-11	CARBON 1K 5% 1/4W	
R154	1-249-441-11	CARBON 100K 5% 1/4W	
R155	1-249-416-11	CARBON 820 5% 1/4W	
R156	1-247-897-11	CARBON 560K 5% 1/4W	
R157	1-249-437-11	CARBON 47K 5% 1/4W	
R158	1-249-441-11	CARBON 100K 5% 1/4W	
R159	1-249-417-11	CARBON 1K 5% 1/4W	
R160	1-249-423-11	CARBON 3.3K 5% 1/4W	
R161	1-249-429-11	CARBON 10K 5% 1/4W	
R162	1-249-417-11	CARBON 1K 5% 1/4W	
R163	1-247-903-00	CARBON 1M 5% 1/4W	
R164	1-249-417-11	CARBON 1K 5% 1/4W	
R165	1-247-903-00	CARBON 1M 5% 1/4W	
R166	1-249-413-11	CARBON 470 5% 1/4W	
R167	1-247-903-00	CARBON 1M 5% 1/4W	
R168	1-249-413-11	CARBON 470 5% 1/4W	
R169	1-247-903-00	CARBON 1M 5% 1/4W	
R180-184	1-247-807-31	CARBON 100 5% 1/4W	
R187	1-249-403-11	CARBON 68 5% 1/4W	
R241-243	1-249-437-11	CARBON 47K 5% 1/4W	
R261-265	1-249-417-11	CARBON 1K 5% 1/4W	

Ref. No.	Part No.	Description	Remark
*	1-648-762-11	BALANCE BOARD	

	< VARIABLE RESISTOR >		
RV201	1-241-385-11	RES, VAR, CARBON 100K (BALANCE)	

*	A-4360-765-A	MAIN BOARD, COMPLETE (TA-D709E:G, IT, EE)	
*	A-4360-766-A	MAIN BOARD, COMPLETE (TA-A77E)	
*	A-4360-768-A	MAIN BOARD, COMPLETE (TA-D709E:UK)	
*	A-4365-527-A	MAIN BOARD, COMPLETE (TA-D709E:AEP)	

*	3-309-144-21	HEAT SINK	
*	4-870-539-00	PLATE, GROUND	
*	4-880-403-11	HEAT SINK	
	7-682-548-04	SCREW +BVTT 3X8 (S)	
	< BASE POST >		
BP1	1-535-139-00	BASE POST 22MM (10MM PITCH) 2P (TA-A77E)	
* BP2	1-560-595-00	TERMINAL (WITH BASE) (TA-A77E)	
* BP3	1-560-595-00	TERMINAL (WITH BASE) (TA-A77E)	
	< CAPACITOR >		
△C1	1-161-744-51	CERAMIC 0.01uF 400V	
△C2	1-161-741-00	CERAMIC 0.001uF 10% 400V	
△C3	1-161-741-00	CERAMIC 0.001uF 10% 400V	
△C4	1-161-741-00	CERAMIC 0.001uF 10% 400V	
△C5	1-161-741-00	CERAMIC 0.001uF 10% 400V	
△C6	1-161-741-00	CERAMIC 0.001uF 10% 400V	
△C7	1-161-744-51	CERAMIC 0.01uF 400V	
C118	1-126-049-11	ELECT 22uF 20% 25V	
C119	1-126-022-11	ELECT 47uF 20% 10V	
C120	1-136-153-00	FILM 0.01uF 5% 50V	
C121	1-126-059-11	ELECT 10uF 20% 50V	
C137	1-136-153-00	FILM 0.01uF 5% 50V	
C168	1-126-049-11	ELECT 22uF 20% 25V	
C169	1-126-022-11	ELECT 47uF 20% 10V	
C170	1-136-153-00	FILM 0.01uF 5% 50V	
C171	1-126-059-11	ELECT 10uF 20% 50V	
C187	1-136-153-00	FILM 0.01uF 5% 50V	
C202	1-126-022-11	ELECT 47uF 20% 10V	
C203	1-164-159-11	CERAMIC 0.1uF 50V	
C204	1-164-159-11	CERAMIC 0.1uF 50V	
C205	1-126-022-11	ELECT 47uF 20% 10V	
C207	1-126-049-11	ELECT 22uF 20% 25V	
C208	1-164-159-11	CERAMIC 0.1uF 50V	
C209	1-126-049-11	ELECT 22uF 20% 25V	
C210	1-164-159-11	CERAMIC 0.1uF 50V	
C212	1-164-159-11	CERAMIC 0.1uF 50V	

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description		Remark
C213	1-126-022-11	ELECT	47uF	20% 10V
C214	1-164-159-11	CERAMIC	0. 1uF	50V
C215	1-164-159-11	CERAMIC	0. 1uF	50V
C216	1-126-022-11	ELECT	47uF	20% 10V
C217	1-126-022-11	ELECT	47uF	20% 10V
C218	1-164-159-11	CERAMIC	0. 1uF	50V
C219	1-126-022-11	ELECT	47uF	20% 10V
C220	1-164-159-11	CERAMIC	0. 1uF	50V
C221	1-164-159-11	CERAMIC	0. 1uF	50V
C222	1-124-587-11	ELECT	220uF	20% 6. 3V
C223	1-126-049-11	ELECT	22uF	20% 25V
C224	1-164-159-11	CERAMIC	0. 1uF	50V
C225	1-126-022-11	ELECT	47uF	20% 10V
C226	1-164-159-11	CERAMIC	0. 1uF	50V
C227	1-126-301-11	ELECT	1uF	20% 50V
C228	1-124-478-11	ELECT	100uF	20% 25V
C229	1-136-171-00	FILM	0. 33uF	5% 50V
C230	1-136-165-00	FILM	0. 1uF	5% 50V
C231	1-126-301-11	ELECT	1uF	20% 50V
C232	1-136-159-00	FILM	0. 033uF	5% 50V
C233	1-136-158-00	FILM	0. 027uF	5% 50V
C234	1-106-359-00	MYLAR	4700PF	5% 200V
C235	1-130-482-00	MYLAR	0. 0082uF	5% 50V
C236	1-126-049-11	ELECT	22uF	20% 25V
C237	1-124-478-11	ELECT	100uF	20% 25V
C238	1-126-301-11	ELECT	1uF	20% 50V
C239	1-126-301-11	ELECT	1uF	20% 50V
C240	1-164-013-11	CERAMIC	4PF	0. 25PF 50V
C241	1-164-015-11	CERAMIC	6PF	0. 5PF 50V
C242	1-126-163-11	ELECT	4. 7uF	20% 50V
C243	1-164-159-11	CERAMIC	0. 1uF	50V
C244	1-162-294-31	CERAMIC	0. 001uF	10% 50V
C245	1-162-294-31	CERAMIC	0. 001uF	10% 50V
C246	1-162-286-31	CERAMIC	220PF	10% 50V
C247	1-162-286-31	CERAMIC	220PF	10% 50V
C248	1-162-286-31	CERAMIC	220PF	10% 50V
C249	1-164-159-11	CERAMIC	0. 1uF	50V
C250	1-162-286-31	CERAMIC	220PF	10% 50V
C251	1-162-286-31	CERAMIC	220PF	10% 50V
C253	1-164-159-11	CERAMIC	0. 1uF	50V
(TA-D709E:AEP) (TYPE III, IV)				
C301	1-164-068-11	CERAMIC	82PF	5% 50V
C302	1-161-375-00	CERAMIC	0. 0022uF	20% 50V
C303	1-126-022-11	ELECT	47uF	20% 10V
C304	1-164-057-11	CERAMIC	30PF	5% 50V
C305	1-164-057-11	CERAMIC	30PF	5% 50V
C306	1-106-359-00	MYLAR	4700PF	5% 200V
C307	1-130-472-00	MYLAR	0. 0012uF	5% 50V
C308	1-126-022-11	ELECT	47uF	20% 16V

Ref. No.	Part No.	Description		Remark
C309	1-164-066-11	CERAMIC	68PF	5% 50V
C310	1-126-022-11	ELECT	47uF	20% 16V
C311-313				
	1-126-301-11	ELECT	1uF	20% 50V
C314	1-126-049-11	ELECT	22uF	20% 25V
C316	1-164-066-11	CERAMIC	68PF	5% 50V
C317	1-126-049-11	ELECT	22uF	20% 25V
C318	1-126-022-11	ELECT	47uF	20% 16V
C319	1-164-066-11	CERAMIC	68PF	5% 50V
C323	1-136-841-81	FILM	0. 39uF	5% 50V
C324	1-136-164-00	FILM	0. 082uF	5% 50V
C325	1-126-301-11	ELECT	1uF	20% 50V
C328	1-126-049-11	ELECT	22uF	20% 25V
C329	1-126-022-11	ELECT	47uF	20% 16V
C351	1-164-068-11	CERAMIC	82PF	5% 50V
C352	1-161-375-00	CERAMIC	0. 0022uF	20% 50V
C353	1-126-022-11	ELECT	47uF	20% 10V
C354	1-164-057-11	CERAMIC	30PF	5% 50V
C355	1-164-057-11	CERAMIC	30PF	5% 50V
C356	1-106-359-00	MYLAR	4700PF	5% 200V
C357	1-130-472-00	MYLAR	0. 0012uF	5% 50V
C358	1-126-022-11	ELECT	47uF	20% 16V
C359	1-164-066-11	CERAMIC	68PF	5% 50V
C360	1-126-022-11	ELECT	47uF	20% 16V
C361-363				
	1-126-301-11	ELECT	1uF	20% 50V
C364	1-126-049-11	ELECT	22uF	20% 25V
C366	1-164-066-11	CERAMIC	68PF	5% 50V
C367	1-126-049-11	ELECT	22uF	20% 25V
C368	1-126-022-11	ELECT	47uF	20% 16V
C369	1-164-066-11	CERAMIC	68PF	5% 50V
C373	1-136-841-81	FILM	0. 39uF	5% 50V
C374	1-136-164-00	FILM	0. 082uF	5% 50V
C375	1-126-301-11	ELECT	1uF	20% 50V
C378	1-126-049-11	ELECT	22uF	20% 25V
C379	1-126-022-11	ELECT	47uF	20% 16V
C401	1-106-347-00	MYLAR	1500PF	5% 200V
C402	1-130-478-00	MYLAR	0. 0039uF	5% 50V
C403	1-164-077-11	CERAMIC	220PF	10% 50V
C404	1-126-022-11	ELECT	47uF	20% 16V
C405	1-126-049-11	ELECT	22uF	20% 25V
C406-408				
	1-126-059-11	ELECT	10uF	20% 50V
C409	1-126-300-11	ELECT	0. 47uF	20% 50V
C410	1-126-022-11	ELECT	47uF	20% 16V
C411	1-126-163-11	ELECT	4. 7uF	20% 50V
C412	1-126-163-11	ELECT	4. 7uF	20% 50V
C451	1-106-347-00	MYLAR	1500PF	5% 200V
C452	1-130-478-00	MYLAR	0. 0039uF	5% 50V

MAIN

Ref. No.	Part No.	Description	Remark
C453	1-164-077-11	CERAMIC	220PF 10% 50V
C454	1-126-022-11	ELECT	47uF 20% 16V
C455	1-126-049-11	ELECT	22uF 20% 25V
C456-458	1-126-059-11	ELECT	10uF 20% 50V
C459	1-126-300-11	ELECT	0.47uF 20% 50V
C460	1-126-022-11	ELECT	47uF 20% 16V
C461	1-126-163-11	ELECT	4.7uF 20% 50V
C462	1-126-163-11	ELECT	4.7uF 20% 50V
C501	1-126-022-11	ELECT	47uF 20% 10V
C502	1-164-159-11	CERAMIC	0.1uF 50V
C702	1-124-920-11	ELECT	330uF 20% 63V
C703	1-126-233-11	ELECT	22uF 20% 50V
C704	1-124-122-11	ELECT	100uF 20% 50V
C705	1-126-860-11	ELECT	3300uF 20% 35V
C706	1-126-860-11	ELECT	3300uF 20% 35V
C707	1-126-012-11	ELECT	470uF 20% 16V
C708	1-126-012-11	ELECT	470uF 20% 16V
C709	1-124-443-00	ELECT	100uF 20% 10V
C710	1-164-159-11	CERAMIC	0.1uF 50V
C711	1-124-887-00	ELECT	3300uF 20% 16V
C712	1-126-022-11	ELECT	47uF 20% 16V
C713	1-124-463-00	ELECT	0.1uF 20% 50V
C714	1-136-161-00	FILM	0.047uF 5% 50V
C715	1-124-994-11	ELECT	100uF 20% 10V
C716	1-161-377-00	CERAMIC	0.0047uF 30% 50V
C717	1-161-377-00	CERAMIC (TYPE I, II)	0.0047uF 30% 50V
C717	1-161-377-00	CERAMIC (TA-A77E/TA-D709E:UK) (TYPE III, IV)	0.0047uF 30% 50V
C717	1-164-159-11	CERAMIC (TA-D709E:AEP, G, IT, EE) (TYPE III, IV)	0.1uF 50V
C718	1-161-377-00	CERAMIC (TYPE I, II)	0.0047uF 30% 50V
C718	1-161-377-00	CERAMIC (TA-A77E/TA-D709E:UK) (TYPE III, IV)	0.0047uF 30% 50V
C718	1-164-159-11	CERAMIC (TA-D709E:AEP, G, IT, EE) (TYPE III, IV)	0.1uF 50V
C719	1-161-377-00	CERAMIC	0.0047uF 30% 50V
C722	1-126-059-11	ELECT	10uF 20% 50V
C723	1-126-059-11	ELECT	10uF 20% 50V
C724	1-124-910-11	ELECT	47uF 20% 50V
C725	1-124-910-11	ELECT	47uF 20% 50V
C726	1-136-165-00	FILM (TA-D709E:AEP, G, IT, EE) (TYPE II, III, IV)	0.1uF 5% 50V
C727	1-136-165-00	FILM (TA-D709E:AEP, G, IT, EE) (TYPE II, III, IV)	0.1uF 5% 50V

Ref. No.	Part No.	Description	Remark
< CONNECTOR >			
* CN1	1-564-321-00	PIN, CONNECTOR 2P	
* CN101	1-566-858-41	SOCKET, CONNECTOR 11P (SYSTEM CONTROL 1)	
* CN102	1-564-507-11	PLUG, CONNECTOR 4P	
CN201	1-564-510-11	PLUG, CONNECTOR 7P	
* CN301	1-564-506-11	PLUG, CONNECTOR 3P	
* CN401	1-566-858-31	SOCKET, CONNECTOR 11P (SYSTEM CONTROL 3)	
* CN402	1-564-506-11	PLUG, CONNECTOR 3P	
* CN501	1-565-561-11	PIN, CONNECTOR 3P (AU BUS)	
* CN502	1-568-836-11	SOCKET, CONNECTOR 17P	
CN803	1-564-505-11	PLUG, CONNECTOR 2P (TA-D709E:AEP) (TYPE III, IV)	
* CNJ101	1-573-978-11	CONNECTOR, BOARD TO BOARD 11P	
* CNJ102	1-573-978-11	CONNECTOR, BOARD TO BOARD 11P	
* CNP103	1-565-967-11	PIN, CONNECTOR (PC BOARD) 5P	
CNP801	1-569-493-11	SOCKET, CONNECTOR 7P	
< DIODE >			
D301-303	8-719-987-63	DIODE 1N4148M	
D351-353	8-719-987-63	DIODE 1N4148M	
D701-712	8-719-200-82	DIODE 11ES2	
D713	8-719-002-30	DIODE UZL-22H	
D714	8-719-014-98	DIODE UZP-8.2B	
D715	8-719-200-82	DIODE 11ES2	
D717	8-719-200-82	DIODE 11ES2	
D718	8-719-200-82	DIODE 11ES2	
D719	8-719-987-63	DIODE 1N4148M	
D720	8-719-987-63	DIODE 1N4148M	
D721	8-719-002-30	DIODE UZL-22H	
D722	8-719-000-84	DIODE UZL-7M1	
< COIL >			
FB201-204	1-412-473-21	INDUCTOR 0UH	
FB205	1-412-473-51	INDUCTOR 0UH (TA-D709E:AEP) (TYPE III, IV)	
< IC >			
IC102	8-759-711-35	IC NJM4580D	
IC201	8-759-504-36	IC CS5339-KP	
IC202	8-759-075-34	IC LC83015	
IC203	8-759-158-10	IC CAT514256B-70RS	
IC204	8-752-359-50	IC CXD2564AM	
IC205	8-759-040-59	IC LC7883K	
IC206	8-759-823-24	IC LA2730	
IC207	8-759-801-01	IC LC4966	

Ref. No.	Part No.	Description	Remark
IC208	8-759-801-01 IC	LC4966	
IC301	8-759-634-51 IC	M5218AP (TYPE I)	
IC301	8-759-711-35 IC	NJM4580D (TYPE II, III, IV)	
IC302-305	8-759-634-51 IC	M5218AP	
IC401	8-759-634-51 IC	M5218AP	
IC402	8-759-634-51 IC	M5218AP	
IC403	8-759-820-11 IC	LC7535	
IC404	8-759-634-51 IC	M5218AP	
IC501	8-759-171-73 IC	UPD78014CW-015	
IC701	8-759-231-59 IC	TA7815S	
IC702	8-759-245-87 IC	TA7915S	
IC703	8-759-231-53 IC	TA7805S	
IC704	8-759-245-79 IC	TA79005S	
IC705	8-759-820-13 IC	L78MR06	

< JACK >

J201 1-565-352-51 JACK, PIN 2P (CENTER OUT)

< COIL >

L201 1-408-417-00 INDUCTOR 47uH
 L202 1-410-517-11 INDUCTOR 47uH
 L203 1-408-417-00 INDUCTOR 47uH (TYPE I, II)
 L203 1-408-417-00 INDUCTOR 47uH
 (TA-A77E/TA-D709E:UK, G, IT, EE) (TYPE III, IV)
 L204 1-408-417-00 INDUCTOR 47uH

< LINE FILTER >

△LF1 1-424-117-11 FILTER, LINE

< IC LINK >

△PS701 1-532-835-41 LINK, IC (PRF400) 0.4A
 △PS702 1-532-840-41 LINK, IC (PRF1250) 1.25A
 △PS703 1-532-840-41 LINK, IC (PRF1250) 1.25A
 △PS704 1-532-845-21 LINK, IC (PRF4000) 4A

< TRANSISTOR >

Q201 8-729-900-80 TRANSISTOR DTC114ES
 Q202-212 8-729-900-63 TRANSISTOR DTA124ES
 Q213 8-729-620-05 TRANSISTOR 2SC2603-EF
 Q214 8-729-900-63 TRANSISTOR DTA124ES
 Q215 8-729-141-26 TRANSISTOR 2SC3622A-LK
 Q216 8-729-900-63 TRANSISTOR DTA124ES
 Q217 8-729-620-05 TRANSISTOR 2SC2603-EF
 Q301-303 8-729-141-26 TRANSISTOR 2SC3622A-LK
 Q304-306 8-729-224-61 TRANSISTOR 2SK246-Y

Ref. No.	Part No.	Description	Remark
Q307-311	8-729-141-26 TRANSISTOR	2SC3622A-LK	
Q351-353	8-729-141-26 TRANSISTOR	2SC3622A-LK	
Q354-356	8-729-224-61 TRANSISTOR	2SK246-Y	
Q357-361	8-729-141-26 TRANSISTOR	2SC3622A-LK	
Q401-403	8-729-231-55 TRANSISTOR	2SC2878-AB	
Q451-453	8-729-231-55 TRANSISTOR	2SC2878-AB	
Q701	8-729-209-15 TRANSISTOR	2SD2012	
Q704	8-729-900-80 TRANSISTOR	DTC114ES	
Q705	8-729-119-76 TRANSISTOR	2SA1175-HFE	

< RESISTOR >

R120 1-249-417-11 CARBON 1K 5% 1/4W
 R121 1-247-903-00 CARBON 1M 5% 1/4W
 R122 1-249-417-11 CARBON 1K 5% 1/4W
 R123 1-247-903-00 CARBON 1M 5% 1/4W
 R124 1-247-903-00 CARBON 1M 5% 1/4W
 R125 1-249-417-11 CARBON 1K 5% 1/4W
 R126 1-249-437-11 CARBON 47K 5% 1/4W
 R127 1-249-438-11 CARBON 56K 5% 1/4W
 R128 1-249-437-11 CARBON 47K 5% 1/4W
 R129 1-249-401-11 CARBON 47 5% 1/4W
 R130 1-247-807-31 CARBON 100 5% 1/4W
 R131 1-249-413-11 CARBON 470 5% 1/4W
 R137 1-249-435-11 CARBON 33K 5% 1/4W
 R138 1-249-435-11 CARBON 33K 5% 1/4W
 R170 1-249-417-11 CARBON 1K 5% 1/4W
 R171 1-247-903-00 CARBON 1M 5% 1/4W
 R172 1-249-417-11 CARBON 1K 5% 1/4W
 R173 1-247-903-00 CARBON 1M 5% 1/4W
 R174 1-247-903-00 CARBON 1M 5% 1/4W
 R175 1-249-417-11 CARBON 1K 5% 1/4W
 R176 1-249-437-11 CARBON 47K 5% 1/4W
 R177 1-249-438-11 CARBON 56K 5% 1/4W
 R178 1-249-437-11 CARBON 47K 5% 1/4W
 R179 1-249-401-11 CARBON 47 5% 1/4W
 R180 1-247-807-31 CARBON 100 5% 1/4W
 R181 1-249-413-11 CARBON 470 5% 1/4W
 R187 1-249-435-11 CARBON 33K 5% 1/4W
 R188 1-249-435-11 CARBON 33K 5% 1/4W
 R201 1-247-895-00 CARBON 470K 5% 1/4W
 R203 1-249-413-11 CARBON 470 5% 1/4W
 R204 1-249-393-11 CARBON 10 5% 1/4W
 R206 1-249-393-11 CARBON 10 5% 1/4W
 R207 1-249-397-11 CARBON 22 5% 1/4W

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

MAIN

Ref. No.	Part No.	Description	Remark
R208	1-249-413-11	CARBON	470 5% 1/4W
R209	1-249-413-11	CARBON	470 5% 1/4W
R210	1-249-397-11	CARBON	22 5% 1/4W
R211	1-247-862-11	CARBON	20K 5% 1/4W
R212	1-249-429-11	CARBON (TYPE I)	10K 5% 1/4W
R212	1-249-431-11	CARBON (TYPE II, III, IV)	15K 5% 1/4W
R213	1-247-889-00	CARBON	270K 5% 1/4W
R214	1-247-850-11	CARBON	6.2K 5% 1/4W
R215	1-249-437-11	CARBON	47K 5% 1/4W
R216	1-249-423-11	CARBON	3.3K 5% 1/4W
R217	1-247-889-00	CARBON	270K 5% 1/4W
R218	1-249-408-11	CARBON	180 5% 1/4W
R219	1-249-430-11	CARBON	12K 5% 1/4W
R220	1-249-417-11	CARBON	1K 5% 1/4W
R221	1-249-429-11	CARBON	10K 5% 1/4W
R222	1-249-431-11	CARBON	15K 5% 1/4W
R223	1-249-434-11	CARBON	27K 5% 1/4W
R224	1-249-433-11	CARBON	22K 5% 1/4W
R225	1-249-427-11	CARBON	6.8K 5% 1/4W
R226	1-249-437-11	CARBON	47K 5% 1/4W
R227	1-249-437-11	CARBON	47K 5% 1/4W
R228	1-249-413-11	CARBON	470 5% 1/4W
R229	1-249-441-11	CARBON	100K 5% 1/4W
R230	1-249-425-11	CARBON	4.7K 5% 1/4W
R231-240	1-249-441-11	CARBON	100K 5% 1/4W
R241	1-249-437-11	CARBON	47K 5% 1/4W
R242	1-249-437-11	CARBON	47K 5% 1/4W
R243	1-249-413-11	CARBON	470 5% 1/4W
R244-247	1-249-417-11	CARBON	1K 5% 1/4W
R248	1-249-437-11	CARBON	47K 5% 1/4W
R249	1-249-411-11	CARBON	330 5% 1/4W
R250	1-249-429-11	CARBON	10K 5% 1/4W
R251	1-249-425-11	CARBON	4.7K 5% 1/4W
R252	1-249-441-11	CARBON	100K 5% 1/4W
R253	1-249-433-11	CARBON	22K 5% 1/4W
R254	1-249-433-11	CARBON	22K 5% 1/4W
R255	1-247-807-31	CARBON	100 5% 1/4W
R256	1-249-397-11	CARBON	22 5% 1/4W
R257	1-249-397-11	CARBON	22 5% 1/4W
R271-273	1-249-438-11	CARBON	56K 5% 1/4W
R301	1-249-435-11	CARBON	33K 5% 1/4W
R302	1-249-435-11	CARBON	33K 5% 1/4W
R303	1-249-432-11	CARBON	18K 5% 1/4W
R304	1-249-439-11	CARBON	68K 5% 1/4W
R305	1-249-432-11	CARBON	18K 5% 1/4W

Ref. No.	Part No.	Description	Remark
R306	1-249-439-11	CARBON	68K 5% 1/4W
R307-309	1-249-419-11	CARBON	1.5K 5% 1/4W
R310	1-249-441-11	CARBON	100K 5% 1/4W
R311	1-249-441-11	CARBON	100K 5% 1/4W
R312	1-249-426-11	CARBON	5.6K 5% 1/4W
R313	1-249-425-11	CARBON	4.7K 5% 1/4W
R314	1-249-425-11	CARBON	4.7K 5% 1/4W
R315	1-249-419-11	CARBON	1.5K 5% 1/4W
R316	1-247-842-11	CARBON	3K 5% 1/4W
R317	1-249-425-11	CARBON	4.7K 5% 1/4W
R318	1-249-414-11	CARBON	560 5% 1/4W
R319	1-247-838-00	CARBON	2K 5% 1/4W
R320	1-249-425-11	CARBON	4.7K 5% 1/4W
R321	1-249-433-11	CARBON (TYPE I)	22K 5% 1/4W
R321	1-249-434-11	CARBON (TYPE II, III, IV)	27K 5% 1/4W
R322	1-249-433-11	CARBON	22K 5% 1/4W
R325	1-249-433-11	CARBON	22K 5% 1/4W
R326	1-249-429-11	CARBON	10K 5% 1/4W
R327	1-249-417-11	CARBON	1K 5% 1/4W
R328	1-249-441-11	CARBON	100K 5% 1/4W
R329	1-249-431-11	CARBON	15K 5% 1/4W
R330	1-249-435-11	CARBON	33K 5% 1/4W
R332	1-249-431-11	CARBON	15K 5% 1/4W
R334	1-249-426-11	CARBON	5.6K 5% 1/4W
R336	1-249-419-11	CARBON	1.5K 5% 1/4W
R337	1-249-436-11	CARBON	39K 5% 1/4W
R338	1-247-884-11	CARBON	160K 5% 1/4W
R339	1-249-425-11	CARBON	4.7K 5% 1/4W
R340	1-249-441-11	CARBON	100K 5% 1/4W
R341	1-249-425-11	CARBON	4.7K 5% 1/4W
R342	1-249-436-11	CARBON	39K 5% 1/4W
R343	1-249-425-11	CARBON	4.7K 5% 1/4W
R344	1-249-427-11	CARBON	6.8K 5% 1/4W
R345	1-249-412-11	CARBON	390 5% 1/4W
R346	1-249-419-11	CARBON	1.5K 5% 1/4W
R347	1-249-431-11	CARBON	15K 5% 1/4W
R351	1-249-435-11	CARBON	33K 5% 1/4W
R352	1-249-435-11	CARBON	33K 5% 1/4W
R353	1-249-432-11	CARBON	18K 5% 1/4W
R354	1-249-439-11	CARBON	68K 5% 1/4W
R355	1-249-432-11	CARBON	18K 5% 1/4W
R356	1-249-439-11	CARBON	68K 5% 1/4W
R357-359	1-249-419-11	CARBON	1.5K 5% 1/4W
R360	1-249-441-11	CARBON	100K 5% 1/4W
R361	1-249-441-11	CARBON	100K 5% 1/4W

MAIN

MICROPHONE AMPLIFIER

Ref. No.	Part No.	Description	Remark
R362	1-249-426-11	CARBON	5.6K 5% 1/4W
R363	1-249-425-11	CARBON	4.7K 5% 1/4W
R364	1-249-425-11	CARBON	4.7K 5% 1/4W
R365	1-249-419-11	CARBON	1.5K 5% 1/4W
R366	1-247-842-11	CARBON	3K 5% 1/4W
R367	1-249-425-11	CARBON	4.7K 5% 1/4W
R368	1-249-414-11	CARBON	560 5% 1/4W
R369	1-247-838-00	CARBON	2K 5% 1/4W
R370	1-249-425-11	CARBON	4.7K 5% 1/4W
R371	1-249-433-11	CARBON	22K 5% 1/4W
	(TYPE I)		
R371	1-249-434-11	CARBON	27K 5% 1/4W
	(TYPE II, III, IV)		
R372	1-249-433-11	CARBON	22K 5% 1/4W
R375	1-249-433-11	CARBON	22K 5% 1/4W
R376	1-249-429-11	CARBON	10K 5% 1/4W
R377	1-249-417-11	CARBON	1K 5% 1/4W
R378	1-249-441-11	CARBON	100K 5% 1/4W
R379	1-249-431-11	CARBON	15K 5% 1/4W
R380	1-249-435-11	CARBON	33K 5% 1/4W
R382	1-249-431-11	CARBON	15K 5% 1/4W
R384	1-249-426-11	CARBON	5.6K 5% 1/4W
R386	1-249-419-11	CARBON	1.5K 5% 1/4W
R387	1-249-436-11	CARBON	39K 5% 1/4W
R388	1-247-884-11	CARBON	160K 5% 1/4W
R389	1-249-425-11	CARBON	4.7K 5% 1/4W
R390	1-249-441-11	CARBON	100K 5% 1/4W
R391	1-249-425-11	CARBON	4.7K 5% 1/4W
R392	1-249-436-11	CARBON	39K 5% 1/4W
R393	1-249-425-11	CARBON	4.7K 5% 1/4W
R394	1-249-427-11	CARBON	6.8K 5% 1/4W
R395	1-249-412-11	CARBON	390 5% 1/4W
R396	1-249-419-11	CARBON	1.5K 5% 1/4W
R397	1-249-431-11	CARBON	15K 5% 1/4W
R401-403	1-249-423-11	CARBON	3.3K 5% 1/4W
R404	1-249-422-11	CARBON	2.7K 5% 1/4W
R405	1-249-441-11	CARBON	100K 5% 1/4W
R406	1-249-419-11	CARBON	1.5K 5% 1/4W
R407	1-249-430-11	CARBON	12K 5% 1/4W
R408	1-249-441-11	CARBON	100K 5% 1/4W
R409	1-249-419-11	CARBON	1.5K 5% 1/4W
R410	1-249-431-11	CARBON	15K 5% 1/4W
R411	1-249-415-11	CARBON	680 5% 1/4W
R412	1-249-412-11	CARBON	390 5% 1/4W
R413	1-249-425-11	CARBON	4.7K 5% 1/4W
R414	1-249-413-11	CARBON	470 5% 1/4W
R415	1-249-441-11	CARBON	100K 5% 1/4W
R416	1-249-425-11	CARBON	4.7K 5% 1/4W

Ref. No.	Part No.	Description	Remark
R451-453	1-249-423-11	CARBON	3.3K 5% 1/4W
R454	1-249-417-11	CARBON	1K 5% 1/4W
R455	1-249-441-11	CARBON	100K 5% 1/4W
R456	1-249-419-11	CARBON	1.5K 5% 1/4W
R457	1-249-430-11	CARBON	12K 5% 1/4W
R458	1-249-441-11	CARBON	100K 5% 1/4W
R459	1-249-419-11	CARBON	1.5K 5% 1/4W
R460	1-249-431-11	CARBON	15K 5% 1/4W
R461	1-249-413-11	CARBON	470 5% 1/4W
R462	1-249-441-11	CARBON	100K 5% 1/4W
R463	1-249-425-11	CARBON	4.7K 5% 1/4W
R464	1-249-413-11	CARBON	470 5% 1/4W
R465	1-249-441-11	CARBON	100K 5% 1/4W
R466	1-249-425-11	CARBON	4.7K 5% 1/4W
R501-508	1-249-417-11	CARBON	1K 5% 1/4W
R509	1-249-409-11	CARBON	220 5% 1/4W
R510	1-249-409-11	CARBON	220 5% 1/4W
R511-516	1-249-417-11	CARBON	1K 5% 1/4W
R701	1-260-108-81	CARBON	5.6K 5% 1/2W
R706	1-249-425-11	CARBON	4.7K 5% 1/4W
R707	1-249-441-11	CARBON	100K 5% 1/4W
R708	1-249-429-11	CARBON	10K 5% 1/4W
R709	1-249-433-11	CARBON	22K 5% 1/4W
R710	1-249-433-11	CARBON	22K 5% 1/4W
	< SWITCH >		
△S701	1-572-716-11	SWITCH, PUSH (AC POWER) (POWER)	
	< VIBRATOR >		
X201	1-567-970-11	VIBRATOR, CRYSTAL (24MHz)	
X501	1-579-599-21	VIBRATOR, CERAMIC (8.38MHz)	

*	1-648-176-11	MICROPHONE AMPLIFIER BOARD	

	< CAPACITOR >		
C901	1-126-161-11	ELECT	2.2uF 20% 50V
C902	1-164-088-11	CERAMIC	0.001uF 50V
C903	1-162-219-31	CERAMIC	68PF 5% 50V
C904	1-162-284-31	CERAMIC	150PF 10% 50V
C905	1-124-463-00	ELECT	0.1uF 20% 50V
C906	1-126-161-11	ELECT	2.2uF 20% 50V
C907	1-162-219-31	CERAMIC	68PF 5% 50V
C908	1-161-375-00	CERAMIC	0.0022uF 20% 50V
C909	1-136-163-00	FILM	0.068uF 5% 50V
C910	1-126-022-11	ELECT	47uF 20% 16V

The components identified by mark △ or dotted line with mark. △ are critical for safety. Replace only with part number specified.

MICROPHONE AMPLIFIER

PANEL

Ref. No.	Part No.	Description	Remark
C911	1-126-022-11	ELECT	47uF 20% 16V
C912	1-164-159-11	CERAMIC	0.1uF 50V

< CONNECTOR >

* CN901 1-564-507-11 PLUG, CONNECTOR 4P

< IC >

IC901 8-759-184-02 IC NJM2068L-D

< JACK >

J901 1-507-854-00 JACK, PHONE (MIC)

< RESISTOR >

R901	1-249-441-11	CARBON	100K	5%	1/4W
R902	1-249-417-11	CARBON	1K	5%	1/4W
R903	1-249-429-11	CARBON	10K	5%	1/4W
R904	1-249-414-11	CARBON	560	5%	1/4W
R905	1-249-429-11	CARBON	10K	5%	1/4W
R906	1-249-417-11	CARBON	1K	5%	1/4W
R907	1-249-441-11	CARBON	100K	5%	1/4W
R908	1-249-413-11	CARBON	470	5%	1/4W
R909	1-249-429-11	CARBON	10K	5%	1/4W
R910	1-249-416-11	CARBON	820	5%	1/4W

< VARIABLE RESISTOR >

RV901 1-223-334-11 RES, VAR, CARBON 50K (MIC LEVEL)

* A-4360-769-A PANEL BOARD, COMPLETE (TA-D709E)
 * A-4360-952-A PANEL BOARD, COMPLETE (TA-A77E)

* 4-934-853-01 CUSHION
 * 4-957-917-01 HOLDER, FL TUBE

< CAPACITOR >

C601	1-104-905-11	DOUBLE LAYERS	0.22F	5.5V
C602	1-161-494-00	CERAMIC	0.022uF	25V
C603	1-161-494-00	CERAMIC	0.022uF	25V
C604	1-126-177-11	ELECT	100uF	20% 10V
C605	1-164-159-11	CERAMIC	0.1uF	50V
C606	1-164-159-11	CERAMIC	0.1uF	50V

< CONNECTOR >

* CN601 1-568-836-11 SOCKET, CONNECTOR 17P
 * CN602 1-568-826-11 SOCKET, CONNECTOR 7P

Ref. No.	Part No.	Description	Remark
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< DIODE >

D601	8-719-987-63	DIODE	1N4148M
D602	8-719-000-84	DIODE	UZL-7M1
D603-611	8-719-987-63	DIODE	1N4148M
D612	8-719-018-46	LED	SEL3510C-CD (V-VIDEO 1/MD)
D613	8-719-018-46	LED	SEL3510C-CD (V-VIDEO 2)
D614	8-719-018-46	LED	SEL3510C-CD (V-VIDEO 3)
D615	8-719-313-69	LED	SEL3210S-CD (A-VIDEO 1/MD)
D616	8-719-313-69	LED	SEL3210S-CD (A-VIDEO 2)
D617	8-719-313-69	LED	SEL3210S-CD (A-VIDEO 3)
D618	8-719-313-69	LED	SEL3210S-CD (CD)
D619	8-719-313-69	LED	SEL3210S-CD (TUNER)
D620	8-719-313-69	LED	SEL3210S-CD (TAPE)
D621	8-719-313-69	LED	SEL3210S-CD (PHONO)
D622	8-719-313-69	LED	SEL3210S-CD (KARAOKE PON) (TA-A77E)
D623	8-719-313-69	LED	SEL3210S-CD (P. FUNCTION)
D624	8-719-313-69	LED	SEL3210S-CD (SELECT 10)
D625	8-719-313-69	LED	SEL3210S-CD (MORE 10)
D626	8-719-313-69	LED	SEL3210S-CD (P. FILE)
D627	8-719-313-69	LED	SEL3210S-CD (DIGITAL EFFECT)

< FLUORESCENT INDICATOR >

FL601 1-517-167-11 INDICATOR TUBE, FLUORESCENT

< IC >

IC601	8-759-171-72	IC	UPD78012CW-033
IC602	8-759-075-35	IC	TD62C950RF
IC603	8-759-075-35	IC	TD62C950RF

< TRANSISTOR >

Q601	8-729-620-05	TRANSISTOR	2SC2603-EF
Q602	8-729-620-05	TRANSISTOR	2SC2603-EF
Q603-605	8-729-119-76	TRANSISTOR	2SA1175-HFE
Q606-611	8-729-620-05	TRANSISTOR	2SC2603-EF

< RESISTOR >

R601	1-249-434-11	CARBON	27K	5%	1/4W
R603	1-249-429-11	CARBON	10K	5%	1/4W
R604	1-249-429-11	CARBON	10K	5%	1/4W
R605	1-249-417-11	CARBON	1K	5%	1/4W
R606	1-249-425-11	CARBON	4.7K	5%	1/4W
R607	1-249-429-11	CARBON	10K	5%	1/4W
R608	1-249-393-11	CARBON	10	5%	1/4W
R609	1-249-421-11	CARBON	2.2K	5%	1/4W
R610	1-249-421-11	CARBON	2.2K	5%	1/4W

PANEL

VIDEO (3)

Ref. No.	Part No.	Description	Remark
R612-614			
	1-249-417-11	CARBON 1K 5% 1/4W	
R615	1-249-427-11	CARBON 6.8K 5% 1/4W	
R617	1-249-427-11	CARBON 6.8K 5% 1/4W	
R619	1-249-427-11	CARBON 6.8K 5% 1/4W	
R621	1-249-427-11	CARBON 6.8K 5% 1/4W	
R623	1-249-427-11	CARBON 6.8K 5% 1/4W	
R625	1-249-427-11	CARBON 6.8K 5% 1/4W	
R627-633			
	1-249-433-11	CARBON 22K 5% 1/4W	
R634	1-249-400-11	CARBON 39 5% 1/4W	
R635-637			
	1-249-404-00	CARBON 82 5% 1/4W	
R638	1-249-404-00	CARBON 82 5% 1/4W	(TA-A77E)
R639-641			
	1-249-404-00	CARBON 82 5% 1/4W	
R642	1-249-433-11	CARBON 22K 5% 1/4W	
R643	1-249-429-11	CARBON 10K 5% 1/4W	
R644	1-249-417-11	CARBON 1K 5% 1/4W	
R645	1-249-433-11	CARBON 22K 5% 1/4W	
R646-648			
	1-249-423-11	CARBON 3.3K 5% 1/4W	
R649-651			
	1-249-429-11	CARBON 10K 5% 1/4W	
R652	1-249-409-11	CARBON 220 5% 1/4W	(TA-D709E) (TYPE III, IV)
R653	1-249-409-11	CARBON 220 5% 1/4W	(TA-D709E) (TYPE III, IV)
R654	1-249-409-11	CARBON 220 5% 1/4W	(TA-D709E) (TYPE III, IV)
		< SWITCH >	
S601	1-554-303-21	SWITCH, TACTILE (KARAOKE PON) (TA-A77E)	
S602	1-554-303-21	SWITCH, TACTILE (DIGITAL EFFECT)	
S603	1-554-303-21	SWITCH, TACTILE (P. FUNCTION)	
S604	1-554-303-21	SWITCH, TACTILE (DISPLAY)	
S605	1-554-303-21	SWITCH, TACTILE (DBS LEVEL)	
S606	1-554-303-21	SWITCH, TACTILE (DBS FREQUENCY)	
S607	1-554-303-21	SWITCH, TACTILE (1)	
S608	1-554-303-21	SWITCH, TACTILE (2)	
S609	1-554-303-21	SWITCH, TACTILE (3)	
S610	1-554-303-21	SWITCH, TACTILE (4)	
S611	1-554-303-21	SWITCH, TACTILE (5)	
S612	1-554-303-21	SWITCH, TACTILE (6)	
S613	1-554-303-21	SWITCH, TACTILE (7)	
S614	1-554-303-21	SWITCH, TACTILE (8)	
S615	1-554-303-21	SWITCH, TACTILE (9)	
S616	1-554-303-21	SWITCH, TACTILE (10)	
S617	1-554-303-21	SWITCH, TACTILE (SELECT 10)	

Ref. No.	Part No.	Description	Remark
S618	1-554-303-21	SWITCH, TACTILE (MORE 10)	
S619	1-554-303-21	SWITCH, TACTILE (P. FILE)	
S620	1-554-303-21	SWITCH, TACTILE (MEMORY)	
S621	1-554-303-21	SWITCH, TACTILE (EFFECT LEVEL)	
S622	1-554-303-21	SWITCH, TACTILE (ACOUSTIC CONT)	
S623	1-554-303-21	SWITCH, TACTILE (CHARACTER EDIT)	
S624	1-554-303-21	SWITCH, TACTILE (PROLOGIC MODE)	
S625	1-554-303-21	SWITCH, TACTILE (CONTROL (SURROUND))	
S626	1-554-303-21	SWITCH, TACTILE (ON/OFF)	
S627	1-554-303-21	SWITCH, TACTILE (BAND (EQUALIZER))	
S628	1-554-303-21	SWITCH, TACTILE (SLOPE (EQUALIZER))	
S629	1-554-303-21	SWITCH, TACTILE (FLAT)	
S630	1-554-303-21	SWITCH, TACTILE (△ (CURSOR CONTROL))	
S631	1-554-303-21	SWITCH, TACTILE (< (CURSOR CONTROL))	
S632	1-554-303-21	SWITCH, TACTILE (> (CURSOR CONTROL))	
S633	1-554-303-21	SWITCH, TACTILE (▽ (CURSOR CONTROL))	
S634	1-554-303-21	SWITCH, TACTILE (VIDEO 1/MD)	
S635	1-554-303-21	SWITCH, TACTILE (VIDEO 2)	
S636	1-554-303-21	SWITCH, TACTILE (VIDEO 3)	
S637	1-554-303-21	SWITCH, TACTILE (TAPE)	
S638	1-554-303-21	SWITCH, TACTILE (CD)	
S639	1-554-303-21	SWITCH, TACTILE (TUNER)	
S640	1-554-303-21	SWITCH, TACTILE (PHONO)	
		< VIBRATOR >	
X601	1-579-599-21	VIBRATOR, CERAMIC (8.38MHz)	

*	1-648-180-11	VIDEO (3) BOARD	

		< CAPACITOR >	
C135	1-162-286-31	CERAMIC 220PF 10% 50V	
		(TA-D709E)	
C136	1-126-049-11	ELECT 22uF 20% 25V	
C185	1-162-286-31	CERAMIC 220PF 10% 50V	
		(TA-D709E)	
C186	1-126-049-11	ELECT 22uF 20% 25V	
C931	1-126-059-11	ELECT 10uF 20% 50V	
C932	1-164-159-11	CERAMIC 0.1uF 50V	(TA-D709E:AEP) (TYPE III, IV)
C933	1-164-159-11	CERAMIC 0.1uF 50V	(TA-D709E:AEP) (TYPE III, IV)
		< CONNECTOR >	
* CNJ103	1-565-970-11	SOCKET, CONNECTOR (PC BOARD) 5P	
		< JACK >	
J931	1-580-174-41	JACK, PIN (3P FRONT) (VIDEO 3 IN)	

VIDEO (3)

VIDEO FUNCTION

VOL

Ref. No.	Part No.	Description	Remark		
< RESISTOR >					
R135	1-249-417-11	CARBON	1K	5%	1/4W
R136	1-247-903-00	CARBON	1M	5%	1/4W
R185	1-249-417-11	CARBON	1K	5%	1/4W
R186	1-247-903-00	CARBON	1M	5%	1/4W
R931	1-247-804-11	CARBON	75	5%	1/4W

*	A-4360-771-A VIDEO FUNCTION BOARD, COMPLETE (TA-A77E/TA-D709E:UK, G, IT, EE)				
*	A-4365-530-A VIDEO FUNCTION BOARD, COMPLETE (TA-D709E:AEP)				

< CAPACITOR >					
C801	1-126-059-11	ELECT	10uF	20%	50V
C802	1-126-059-11	ELECT	10uF	20%	50V
C804	1-124-471-00	ELECT	1000uF	20%	6.3
C805	1-124-471-00	ELECT	1000uF	20%	6.3
C806	1-124-471-00	ELECT	1000uF	20%	6.3
C807	1-161-494-00	CERAMIC	0.022uF		25V
C808	1-126-049-11	ELECT	22uF	20%	25V
< CONNECTOR >					
CN802	1-564-505-11	PLUG, CONNECTOR 2P (TA-D709E:AEP) (TYPE III, IV)			
* CNJ801	1-569-502-11	PIN, CONNECTOR 7P			
< IC >					
IC801	8-759-061-95	IC	SN761200N		
< JACK >					
J801	1-568-751-51	JACK, PIN (2P SHIELD TYPE) (VIDEO 1/MD)			
J802	1-568-752-51	JACK, PIN (3P SHIELD TYPE) (VIDEO 2/MONITOR)			
< COIL >					
L801	1-410-521-11	INDUCTOR	100uH		
< TRANSISTOR >					
Q801-803	8-729-119-76	TRANSISTOR	2SA1175-HFE		
Q804	8-729-620-05	TRANSISTOR	2SC2603-EF		
< RESISTOR >					
R801	1-247-804-11	CARBON	75	5%	1/4W
R802	1-247-804-11	CARBON	75	5%	1/4W
R804	1-249-403-11	CARBON	68	5%	1/4W
R805	1-249-429-11	CARBON	10K	5%	1/4W

Ref. No.	Part No.	Description	Remark		
R806	1-249-403-11	CARBON	68	5%	1/4W
R807	1-249-429-11	CARBON	10K	5%	1/4W
R808	1-249-403-11	CARBON	68	5%	1/4W
R809	1-249-429-11	CARBON	10K	5%	1/4W
R810-815					
	1-249-408-11	CARBON	180	5%	1/4W
R816	1-249-429-11	CARBON	10K	5%	1/4W
R817	1-249-417-11	CARBON	1K	5%	1/4W
R819	1-249-417-11	CARBON	1K	5%	1/4W

*	A-4360-773-A VOL BOARD, COMPLETE (TA-A77E/TA-D709E:UK, EE)				
*	A-4365-532-A VOL BOARD, COMPLETE (TA-D709E:AEP)				
*	A-4365-533-A VOL BOARD, COMPLETE (TA-D709E:G, IT)				

< CAPACITOR >					
C251	1-161-494-00	CERAMIC	0.022uF		25V
C252	1-126-022-11	ELECT	47uF	20%	10V
C421	1-126-161-11	ELECT	2.2uF	20%	50V
C422	1-126-049-11	ELECT	22uF	20%	25V
C423	1-126-022-11	ELECT	47uF	20%	16V
C425	1-164-159-11	CERAMIC (TA-D709E:AEP)	0.1uF (TYPE III, IV)		50V
C431	1-126-161-11	ELECT	2.2uF	20%	50V
C432	1-126-049-11	ELECT	22uF	20%	25V
C433	1-162-286-31	CERAMIC (TA-D709E:G, IT)	220PF (TYPE II, III, IV)	10%	50V
C471	1-126-161-11	ELECT	2.2uF	20%	50V
C472	1-126-049-11	ELECT	22uF	20%	25V
C473	1-126-022-11	ELECT	47uF	20%	16V
C474	1-162-199-31	CERAMIC	10PF	5%	50V
C475	1-164-159-11	CERAMIC (TA-D709E:AEP)	0.1uF (TYPE III, IV)		50V
C481	1-126-161-11	ELECT	2.2uF	20%	50V
C482	1-126-049-11	ELECT	22uF	20%	25V
C483	1-162-286-31	CERAMIC (TA-D709E:G, IT)	220PF (TYPE II, III, IV)	10%	50V
< CONNECTOR >					
* CN251	1-564-506-11	PLUG, CONNECTOR 3P			
* CN252	1-564-506-11	PLUG, CONNECTOR 3P			
* CN253	1-568-826-11	SOCKET, CONNECTOR 7P			
CN254	1-564-510-11	PLUG, CONNECTOR 7P			
CN255	1-564-506-11	PLUG, CONNECTOR 3P			
< DIODE >					
D251	8-719-010-30	DIODE	UZ-4.3BSC		

Ref. No.	Part No.	Description	Remark
< IC >			
IC251	8-759-820-62 IC	LB1639	
IC421	8-759-710-59 IC	NJM4580D-D	
IC422	8-759-710-59 IC	NJM4580D-D	
< TRANSISTOR >			
Q251	8-729-900-36 TRANSISTOR	DTC124ES	
< RESISTOR >			
R251	1-249-412-11 CARBON	390 5% 1/4W	
R252	1-249-393-11 CARBON	10 5% 1/4W	
R253	1-249-413-11 CARBON	470 5% 1/4W	
R254	1-249-413-11 CARBON	470 5% 1/4W	
R421	1-249-441-11 CARBON	100K 5% 1/4W	
R422	1-249-434-11 CARBON	27K 5% 1/4W	
R423	1-249-426-11 CARBON	5.6K 5% 1/4W	
R424	1-249-441-11 CARBON	100K 5% 1/4W	
R425	1-249-403-11 CARBON	68 5% 1/4W	
R426	1-249-421-11 CARBON	2.2K 5% 1/4W	
R431	1-249-441-11 CARBON	100K 5% 1/4W	
R432	1-249-441-11 CARBON	100K 5% 1/4W	
R433	1-249-417-11 CARBON	1K 5% 1/4W	
R434	1-249-417-11 CARBON	1K 5% 1/4W	
R471	1-249-441-11 CARBON	100K 5% 1/4W	
R472	1-249-434-11 CARBON	27K 5% 1/4W	
R473	1-249-431-11 CARBON	15K 5% 1/4W	
R474	1-249-441-11 CARBON	100K 5% 1/4W	
R475	1-249-403-11 CARBON	68 5% 1/4W	
R476	1-249-421-11 CARBON	2.2K 5% 1/4W	
R481	1-249-441-11 CARBON	100K 5% 1/4W	
R482	1-249-441-11 CARBON	100K 5% 1/4W	
R483	1-249-417-11 CARBON	1K 5% 1/4W	
R484	1-249-417-11 CARBON	1K 5% 1/4W	
< VARIABLE RESISTOR >			
RV202	1-223-389-11 RES, VAR, CARBON 10K/100KX4 (VOLUME)		

Ref. No.	Part No.	Description	Remark
MISCELLANEOUS			

7	1-690-420-11 WIRE, FLAT TYPE (7 CORE) (TA-D709E:EE)		
7	1-690-635-11 WIRE, FLAT TYPE (7 CORE)		
	(TA-A77E/TA-D709E:AEP, UK, G, IT)		
60	1-751-486-11 WIRE (FLAT TYPE) (17 CORE)		
△68	1-575-654-11 CORD, POWER		
	(TA-A77E:EA, MY, SP/TA-D709E:AEP, G, IT, EE)		
△69	1-575-656-11 CORD, POWER (TA-A77E:E, JE)		
△70	1-575-669-21 CORD, POWER (TA-D709E:UK)		
△71	1-751-355-11 CORD, POWER (TA-A77E:AUS)		
△S901	1-570-046-21 SWITCH, VOLTAGE CHANGE (VOLTAGE SELECTOR)		
	(TA-A77E)		
△T701	1-423-671-11 TRANSFORMER, POWER (TA-D709E)		
△T701	1-423-672-11 TRANSFORMER, POWER (TA-A77E)		

HARDWARE LIST

#1	7-682-547-09 SCREW +BVTT 3X6 (S)
#2	7-685-646-79 SCREW +BVTP 3X8 TYPE2 N-S
#3	7-682-548-04 SCREW +BVTT 3X8 (S)
#4	7-621-849-00 SCREW (BV/RING)

The components identified by
 mark △ or dotted line with mark
 △ are critical for safety.
 Replace only with part number
 specified.

TA-A77N/D709N

SERVICE MANUAL REVISED

*AEP Model
UK Model*

TA-D709N

*E Model
Australian Model
Tourist Model*

TA-A77N



This set is the Power Amplifier section in LBT-A77CD/A77CDM/D709CD/D759CD.

This photo is TA-A77N.

SPECIFICATIONS

Peak music power output	A77N : 1000W (4 speakers driven)
Continuous RMS power output	
FRONT	A77N : 90W+90W (6 ohms, at 1kHz, 5% THD) D709N: 80W+80W (6 ohms, DIN, 1kHz) D709N: 100W+100W (6 ohms, at 1kHz, 5% THD)
REAR	A77N : 25W+25W (4 ohms, at 1kHz, 5% THD) D709N: 18W+18W (4 ohms, DIN, 1kHz) D709N: 22W+22W (4 ohms, at 1kHz, 5% THD)
Music power output	
FRONT	D709N: 170W+170W (6 ohms, at 1kHz, 10% THD)
REAR	D709N: 30W+30W (4 ohms, at 1kHz 10% THD)
Frequency response	
FRONT	15Hz to 50kHz ± 0.5 dB
REAR	15Hz to 50kHz ± 0.5 dB
Power requirements	(model for Malaysia and Singapore) 120V/220V/230—240V AC, adjustable with the voltage selector, 50/60Hz (model for AUS, EA, E and JE) 120V/220V/240V AC, adjustable with the voltage selector, 50/60Hz (model for AEP, IT, EE and G) 220—230V AC, 50/60Hz (model for UK) 240V AC, 50/60Hz
Power consumption	A77N: 250W D709N: 210W

Mass	Approx. 7.2kg (15 lbs 14 oz)
Dimensions	Approx. 355×135×330mm (14×5 $\frac{1}{4}$ ×12 $\frac{7}{8}$ inches) (w/h/d, including projections)

Design and specifications are subject to change without notice.



Note

This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

• Abbreviations

AUS:	Australian model
EA :	Saudi Arabia model
JE :	Tourist model
IT :	Italian model
EE :	East European model
G :	German model

SAFETY-RELATED COMPONENT WARNING!!

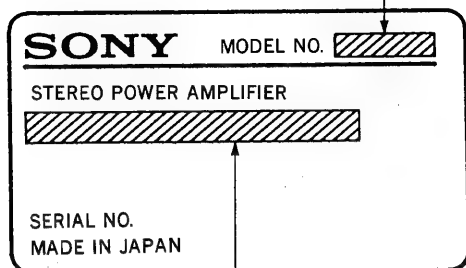
COMPONENTS IDENTIFIED BY MARK  OR DOTTED LINE WITH MARK  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

STEREO POWER AMPLIFIER
SONY®

MODEL IDENTIFICATION

—Specification Label—

AUS, EA, E, JE, MY, SP model: TA-A77N
AEP, IT, EE, G, UK model : TA-D709N



AEP, IT, EE model : AC: 220V—230V~50/60Hz 210W
G model : SYSTEM LBT-D709
AC: 220V—230V~50/60Hz 210W
UK model : AC: 240V~50/60Hz
AUS, EA, E, JE model: AC: 120V/220V/240V~50/60Hz 250W
MY, SP model : AC: 120V/220V/230V—240V 50/60Hz 250W

NOTE FOR SERVICE

To input from the pin jack by using SEN/LBT service jig, connect the SYSTEM CONTROL 3 (white) of TA-A77N/D709N and the SYSTEM CONTROL 1 (blue) of the service jig with a 10pin or 11pin system cord. This allows pin input.

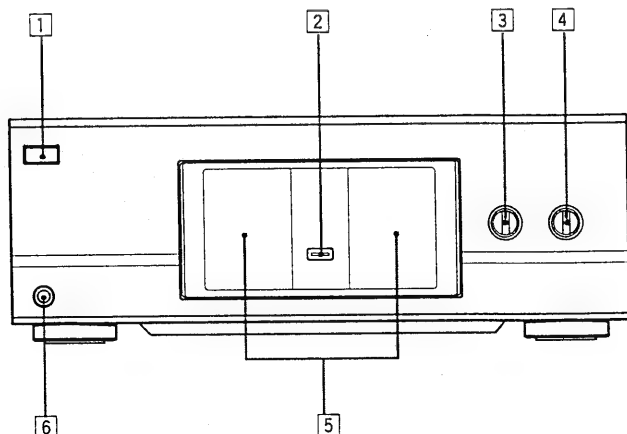
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SECTION 1 GENERAL

This section is extracted from instruction manual.

1-1. PARTS IDENTIFICATION



- ① POWER switch (18)
- ② OPERATION indicator (18)
- ③ RANGE switch (20)
- ④ SPEAKERS switch (20)
- ⑤ Peak level meters (20)
- ⑥ HEADPHONES jack (20)

SECTION 2 SERVICE NOTES

2-1. NOTES AT SERVICE AND INSPECTION

The parts No. suffix of the board differs from set to set.

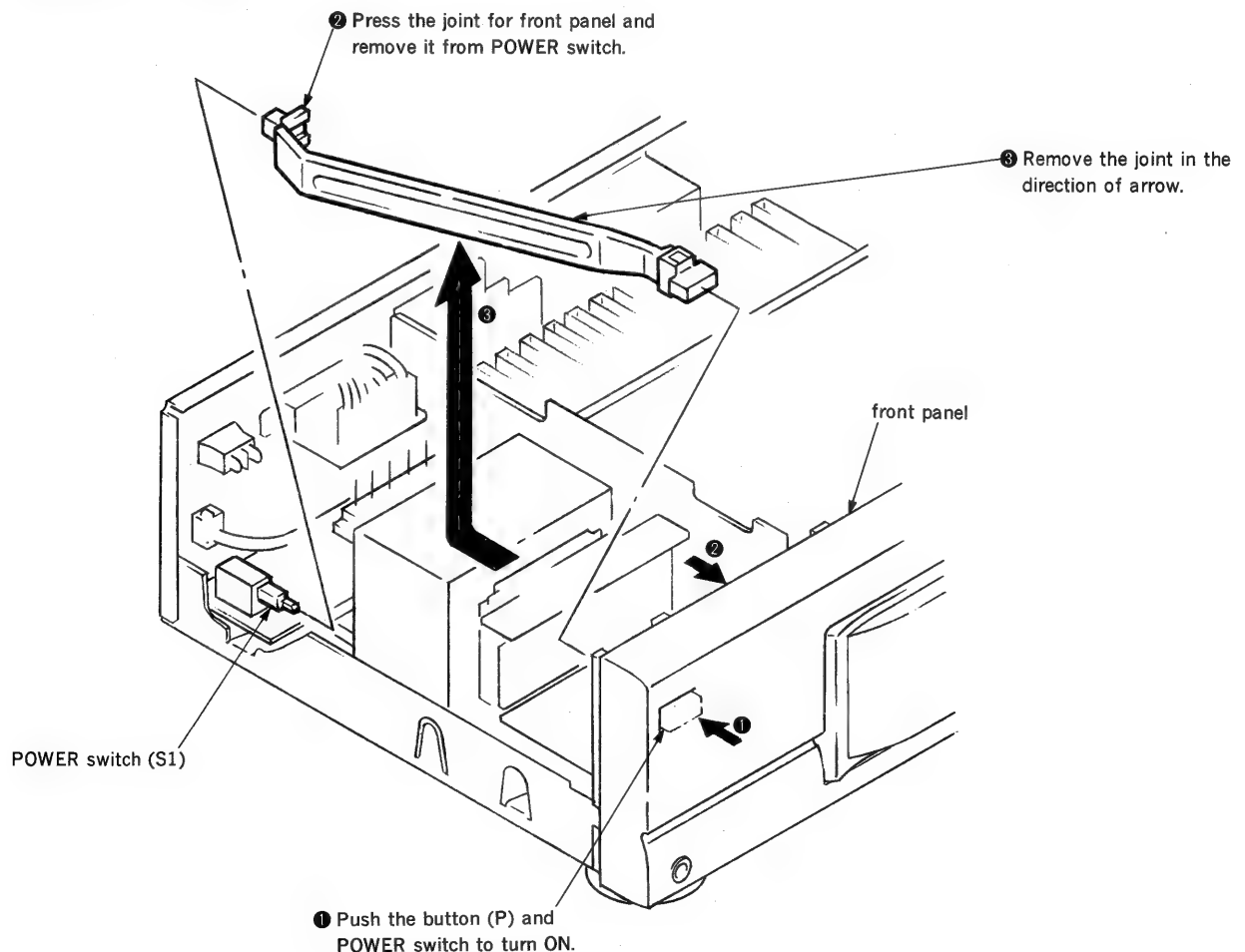
There are four types of parts No. suffix for each board.

Check the type of the set according to the following list before performing service and inspection.

Board Name	The Parts No. Suffix of the Board			
	TYPE I	TYPE II	TYPE III	TYPE IV
MAIN	12	13	14	15
SENSOR	11	11	11	11
RELAY	11	12	13	13
VOLTAGE SELECTION	11	11	11	11
POWER SW	12	12	13	13
SYSTEM CONNECTOR	12	13	13	13
TRANSFORMER SECONDARY	11	12	13	13
PANEL	12	12	12	12
HP	11	11	11	11

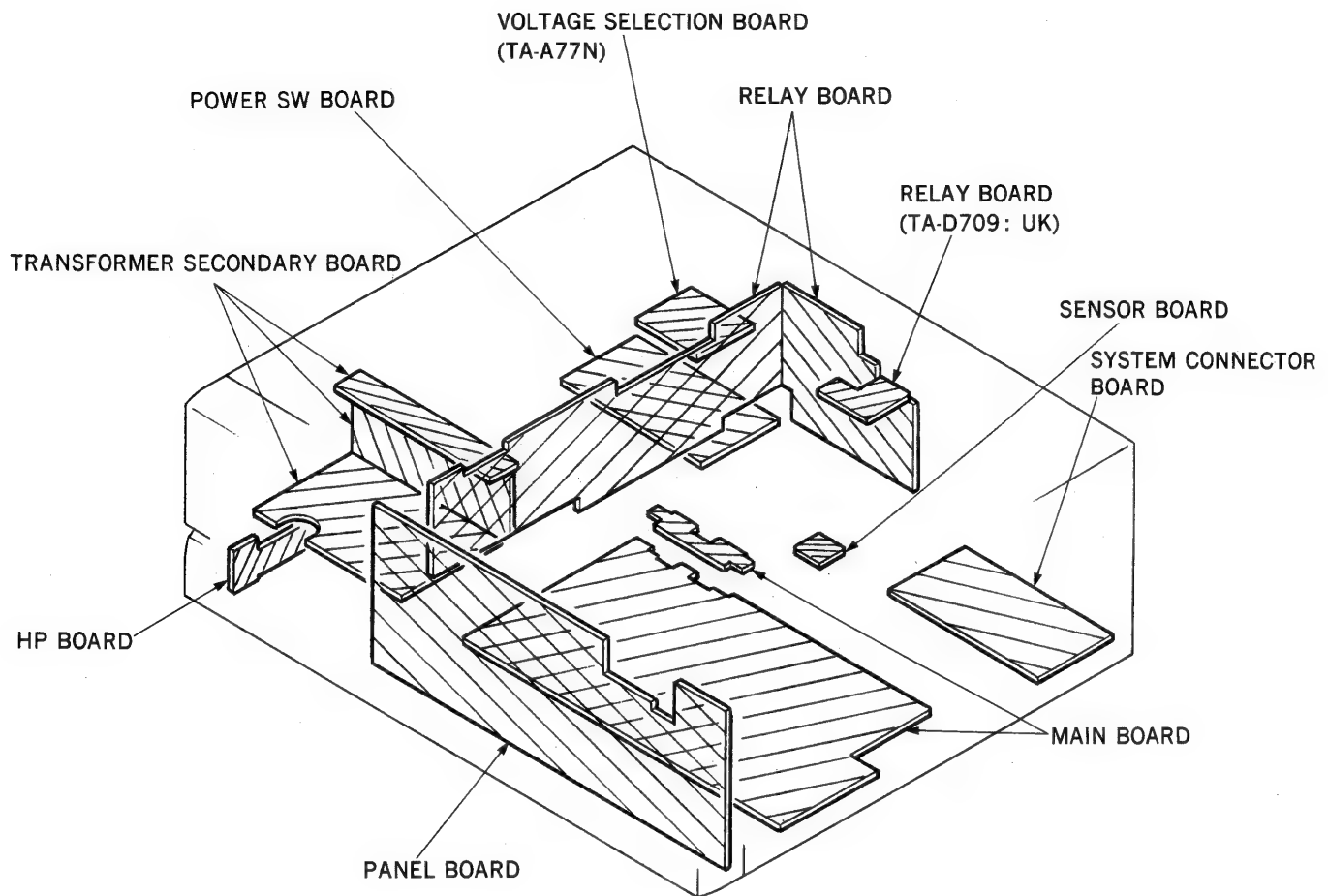
Note : Follow the disassembly procedure in the numerical order given.

2-2. REMOVAL OF JOINT



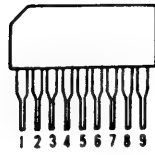
SECTION 3 DIAGRAMS

3-1. CIRCUIT BOARDS LOCATION

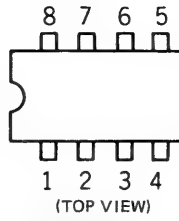


3-2. SEMICONDUCTOR LEAD LAYOUTS

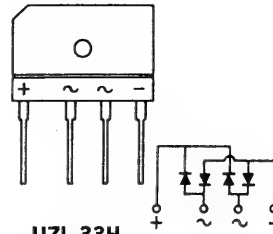
IR2E31A



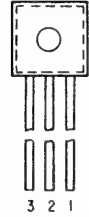
μ PC393C



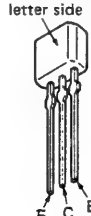
RBA-402
RBV-602-01



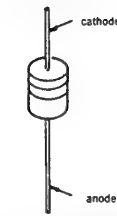
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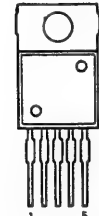
DTA124ES
2SC3623A-LK



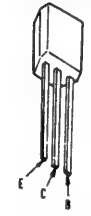
UZL-33H



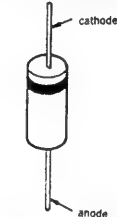
SI18752N



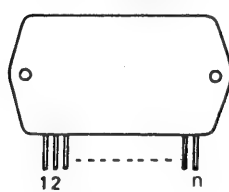
DTC124ES
DTC144ES
2SC2603-EF



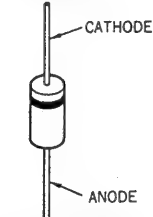
UZP-6.8BC



STK-4211MK2



1N4148M
1S1585
10E2N



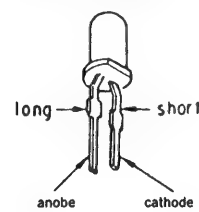
TA7812S



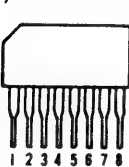
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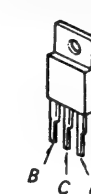
SEL2210W-D
SEL2410E-D



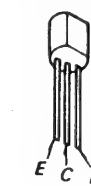
μ PC1237HA



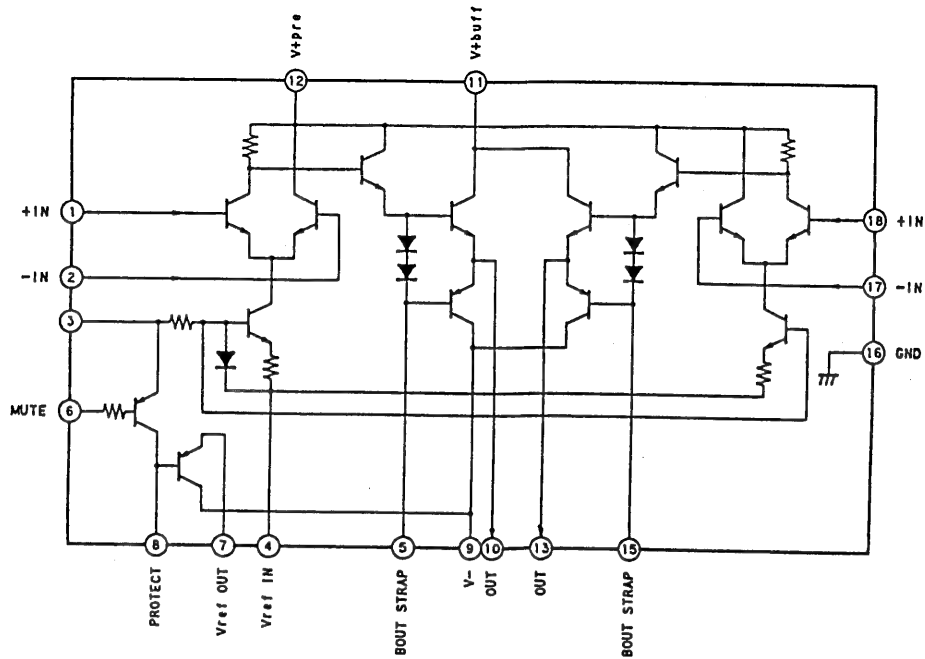
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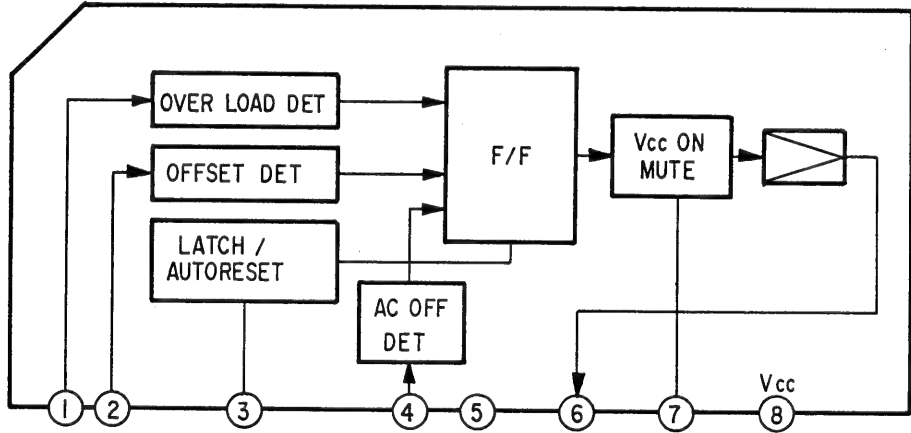
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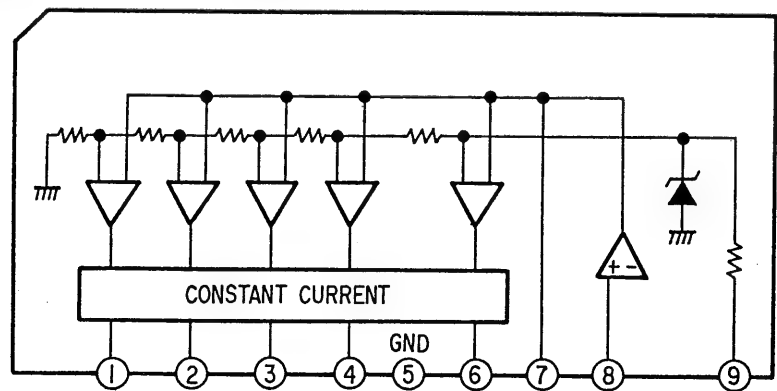
• IC Block Diagrams
 IC101 STK4211MKII



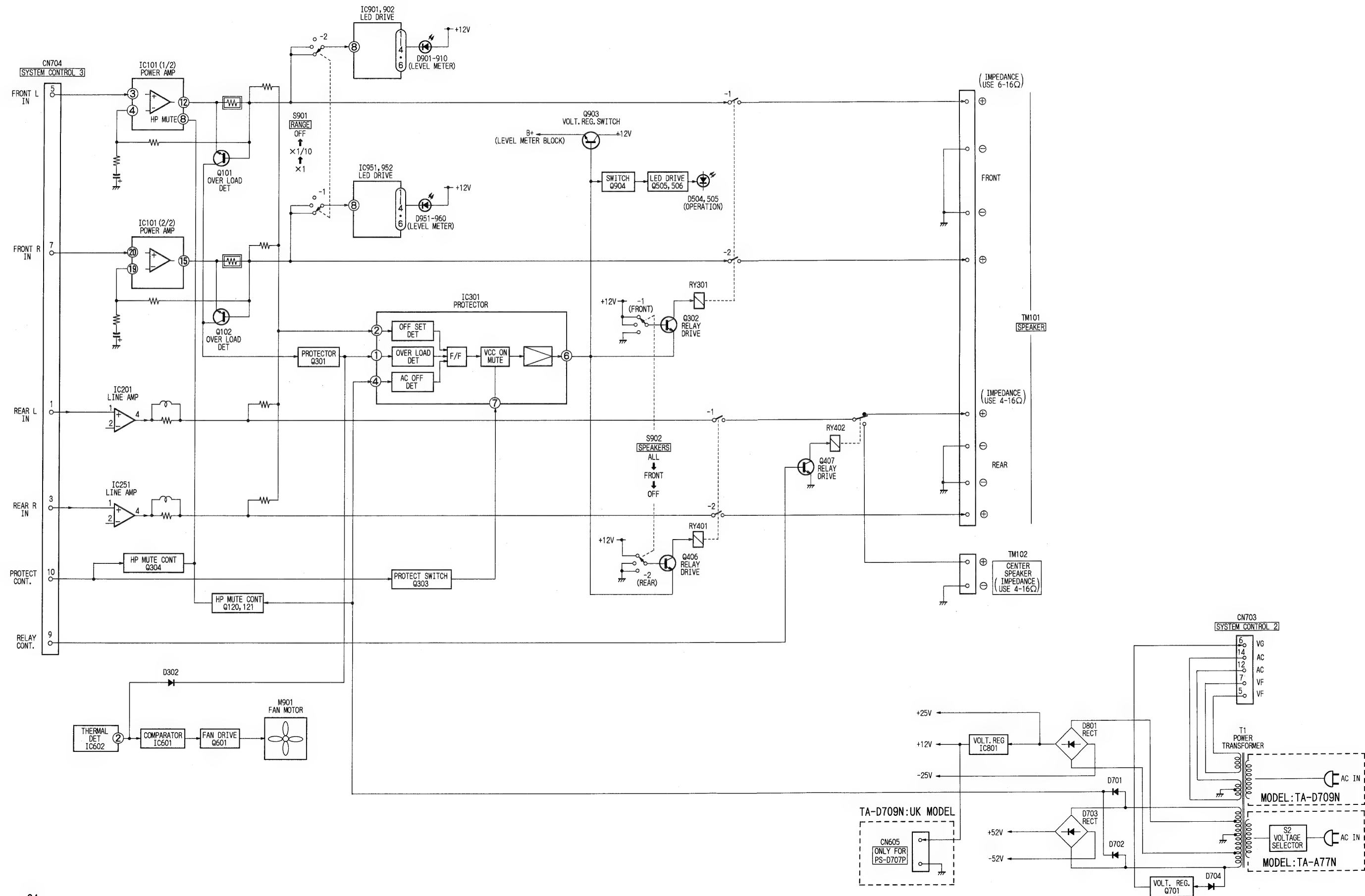
IC301 μ PC1237HA



IC901, 902, 951, 952 IR2E31A



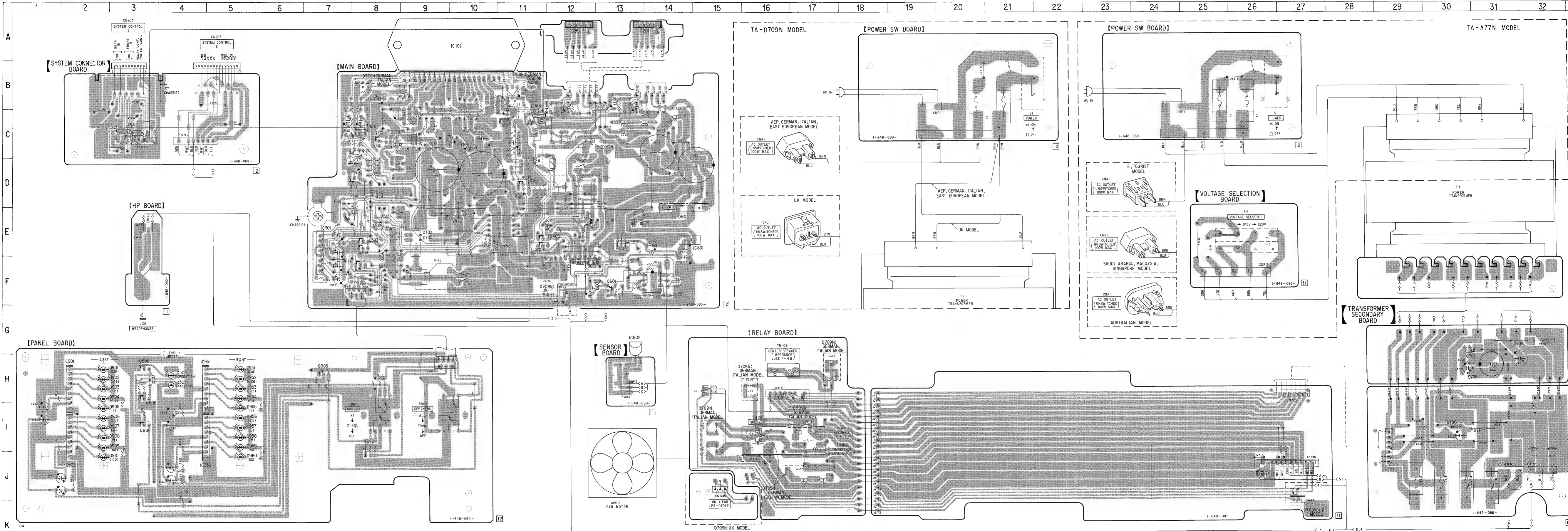
3-3. BLOCK DIAGRAM

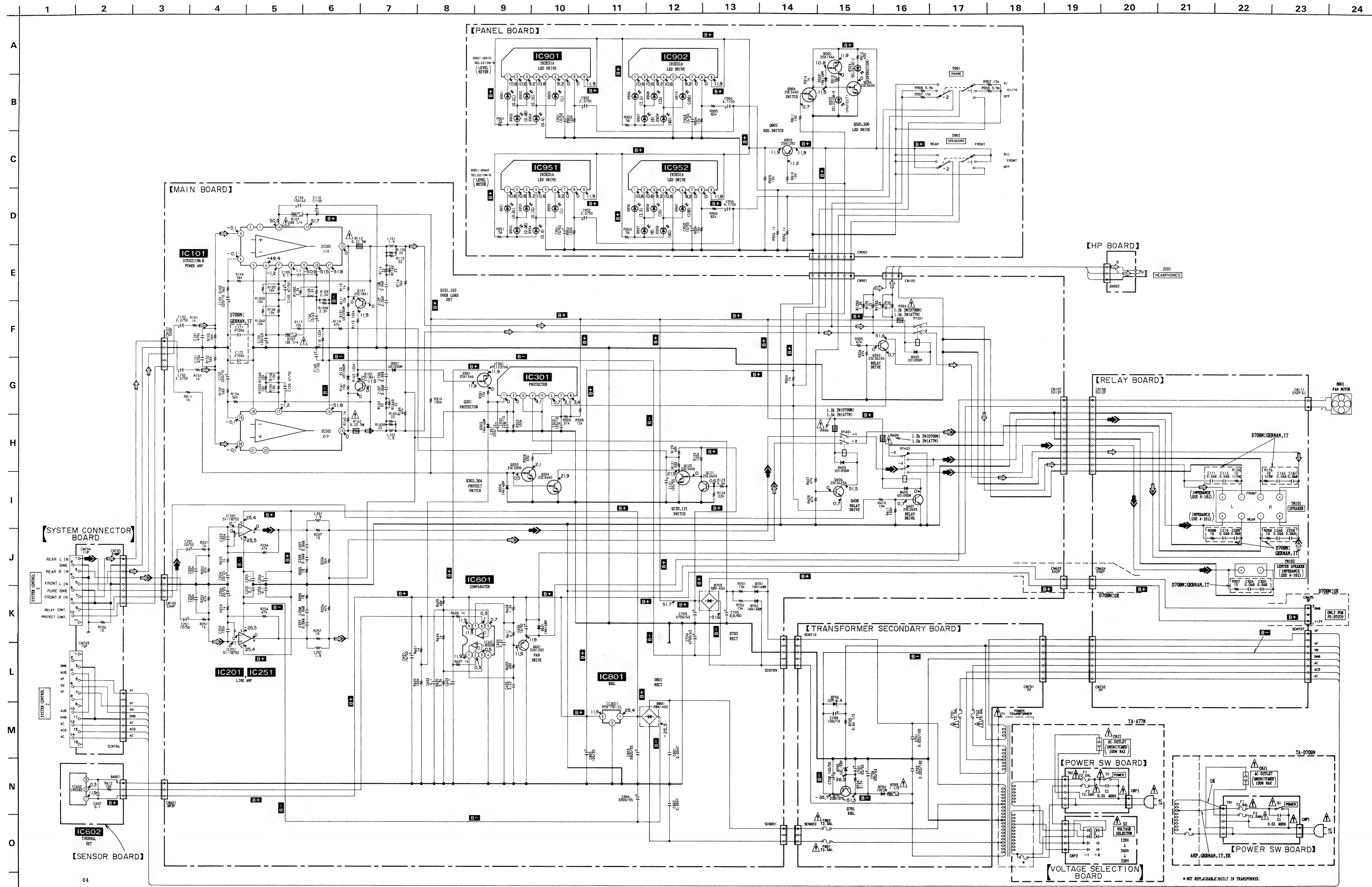


● Semiconductor Location 3-4. PRINTED WIRING BOARDS (TYPE I) ● Refer to page 5 for Semiconductor Lead Layouts.



Ref. No.	Location
D101	D-11
D102	C-8
D301	D-7
D302	E-8
D303	F-9
D304	E-8
D403	C-11
D405	E-12
D503	H-3
D504	H-4
D505	H-4
D601	F-12
D701	E-9
D702	E-9
D703	E-10
D704	G-31
D705	H-30
D706	I-30
D801	E-14
D901	H-2
D902	H-2
D903	H-2
D904	H-2
D905	I-2
D906	I-2
D907	I-2
D908	I-2
D909	I-2
D910	J-2
D951	H-5
D952	H-5
D953	H-5
D954	H-5
D955	I-5
D956	I-5
D957	I-5
D958	I-5
D959	I-5
D960	J-5
IC101	A-10
IC201	A-14
IC251	A-12
IC301	E-7
IC601	F-14
IC602	G-13
IC801	E-14
IC901	H-2
IC902	I-2
IC951	H-4
IC952	I-4
Q101	D-11
Q102	C-8
Q120	C-8
Q121	D-8
Q301	E-7
Q302	F-8
Q303	E-8
Q304	E-8
Q406	E-11
Q407	E-11
Q505	H-3
Q506	H-3
Q601	F-13
Q701	G-30
Q903	H-7
Q904	I-3



Note:
● ○ : parts extracted from the component side.
● : Pattern on the side which is seen.



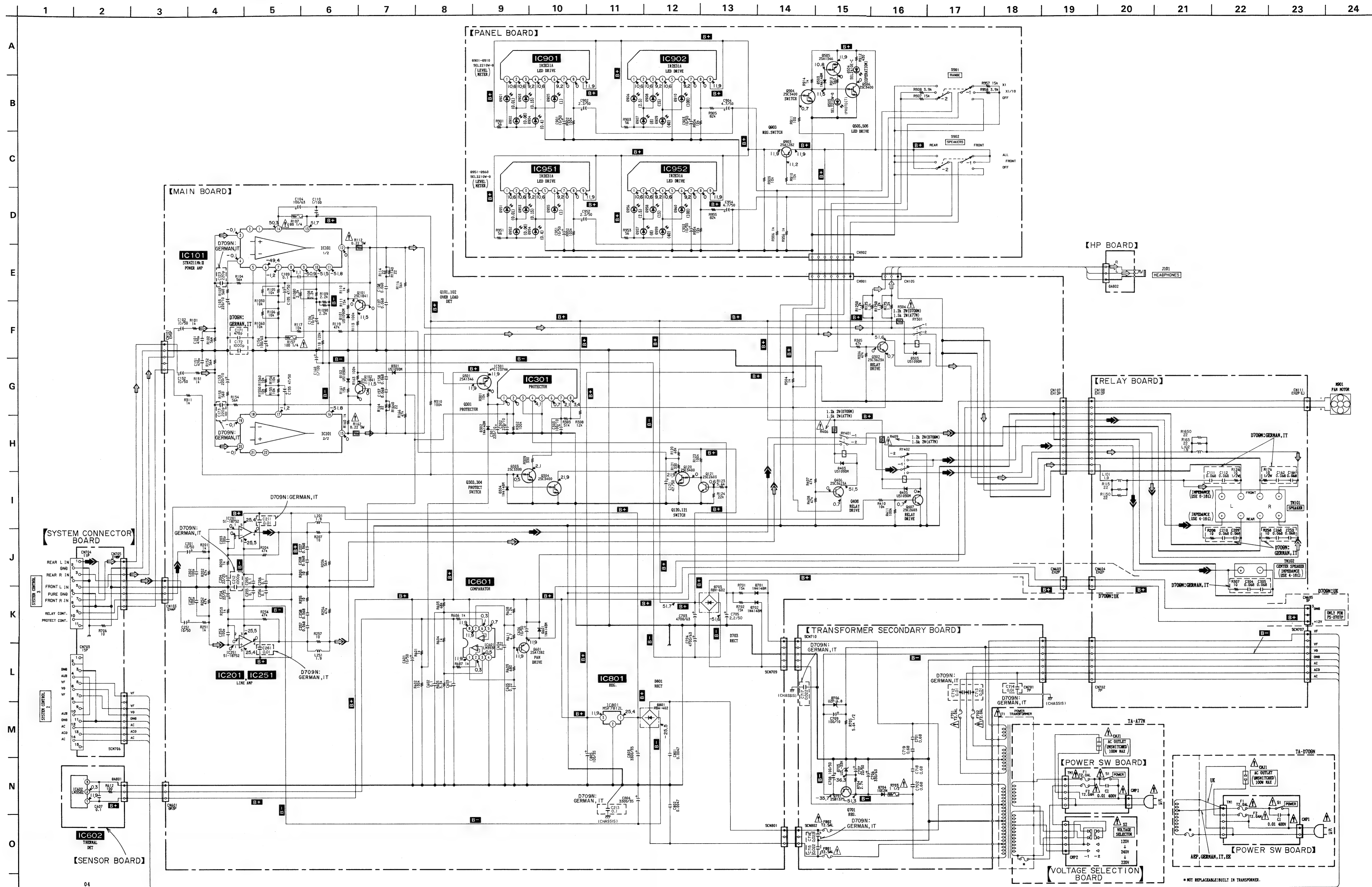


Note:



- All capacitors are in μF unless otherwise noted. pF : μF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}\text{W}$ or less unless otherwise specified.
-  : nonflammable resistor.
-  : fusible resistor.



Note: The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.


- Voltage is to be taken with respect to ground under no-signal conditions
no mark : POWER ON
- Voltages are taken with a VOM (input Impedance 10M Ω).
Voltage variations may be noted due to normal production tolerances.
- Signal path.
 - ⇒ : PHONO
 - ⇒⇒ : SURROUND
 - ⇒⇒⇒ : CENTER
- Abbreviations
 IT : Italian model
 EE : East European model



Note:

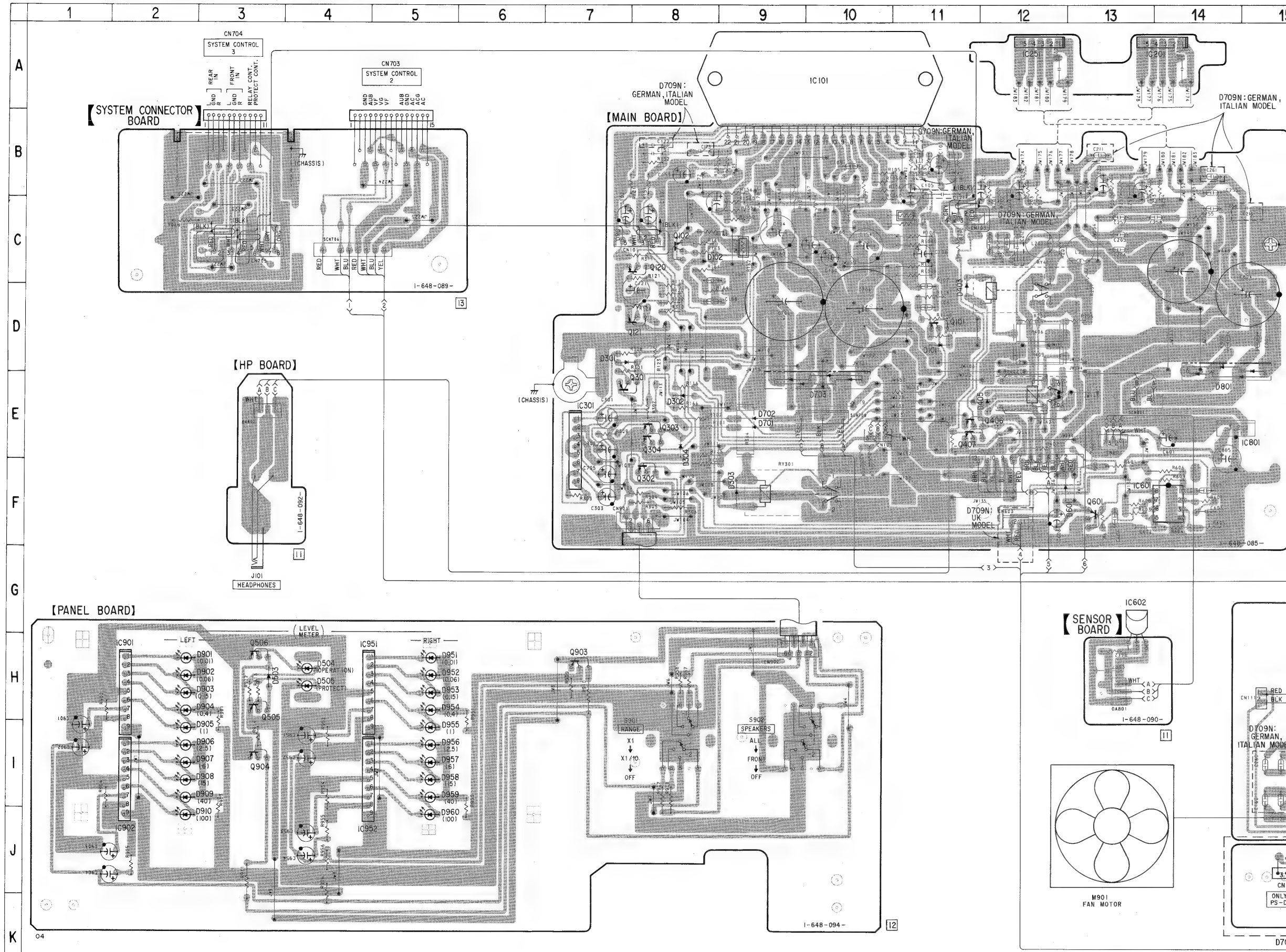
- All capacitors are in μF unless otherwise noted. pF : μF : 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}\text{W}$ or less unless otherwise specified.
-  : nonflammable resistor.
-  : fusible resistor.

Note: The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

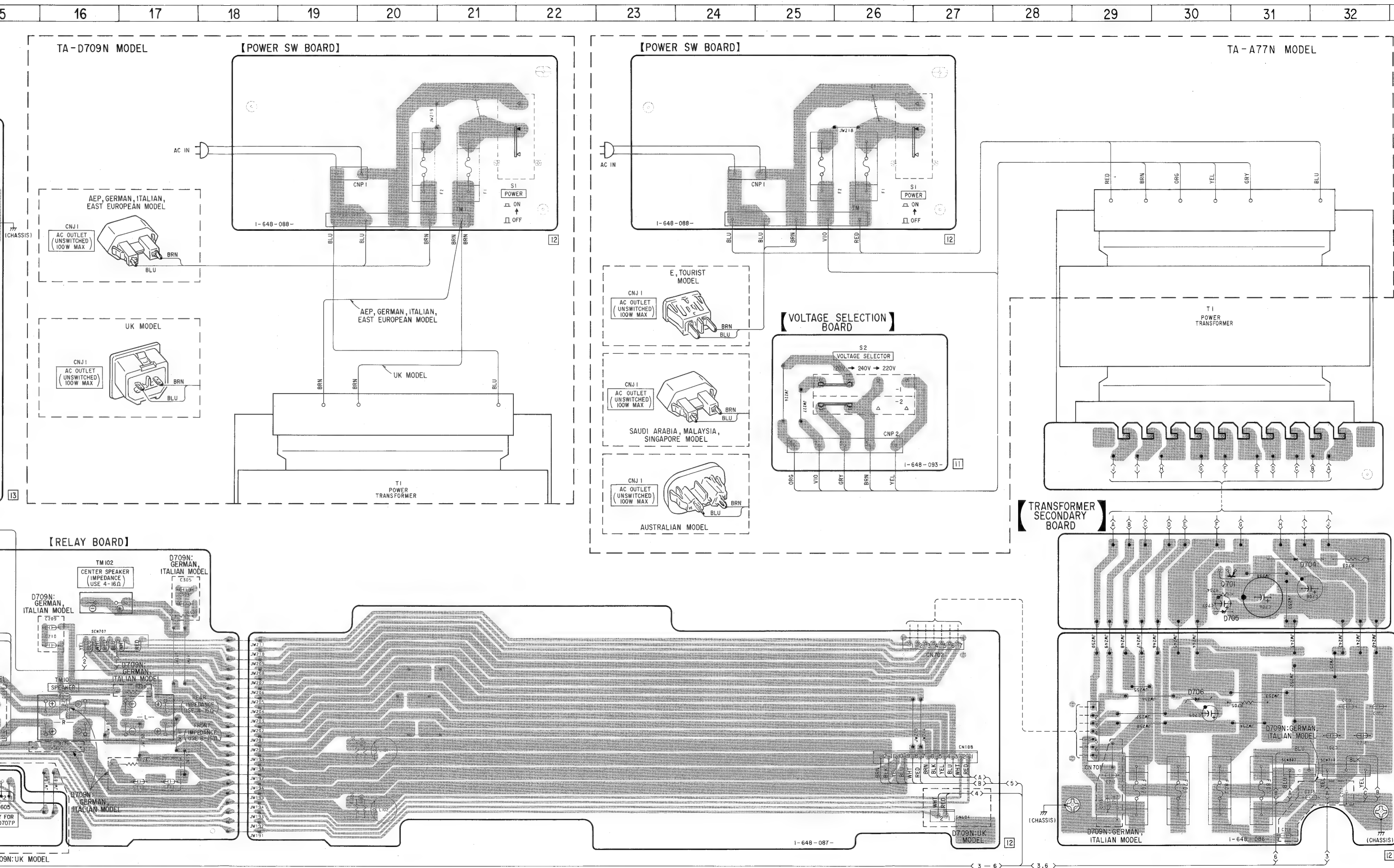
- Voltage is dc with respect to ground under no-signal conditions.
no noise: POWER ON
- Voltages are taken with a VOM (Input impedance 10M Ω).
Voltage variations may be noted due to normal production tolerances.
- Signal path.


The diagram shows a vertical stack of three boxes. The top box is labeled 'PHONO' and has a double-headed arrow pointing to the middle box labeled 'SURROUND'. The middle box has a double-headed arrow pointing to the bottom box labeled 'CENTER'.
- Abbreviations
 IT : Italian model
 EE : East European model

3-7. PRINTED WIRING BOARDS (TYPE II) • Refer to page 5 for Semiconductor Lead Layouts.



Note:
• ○ — : parts extracted from the component side.
• ■ : Pattern on the side which is seen.



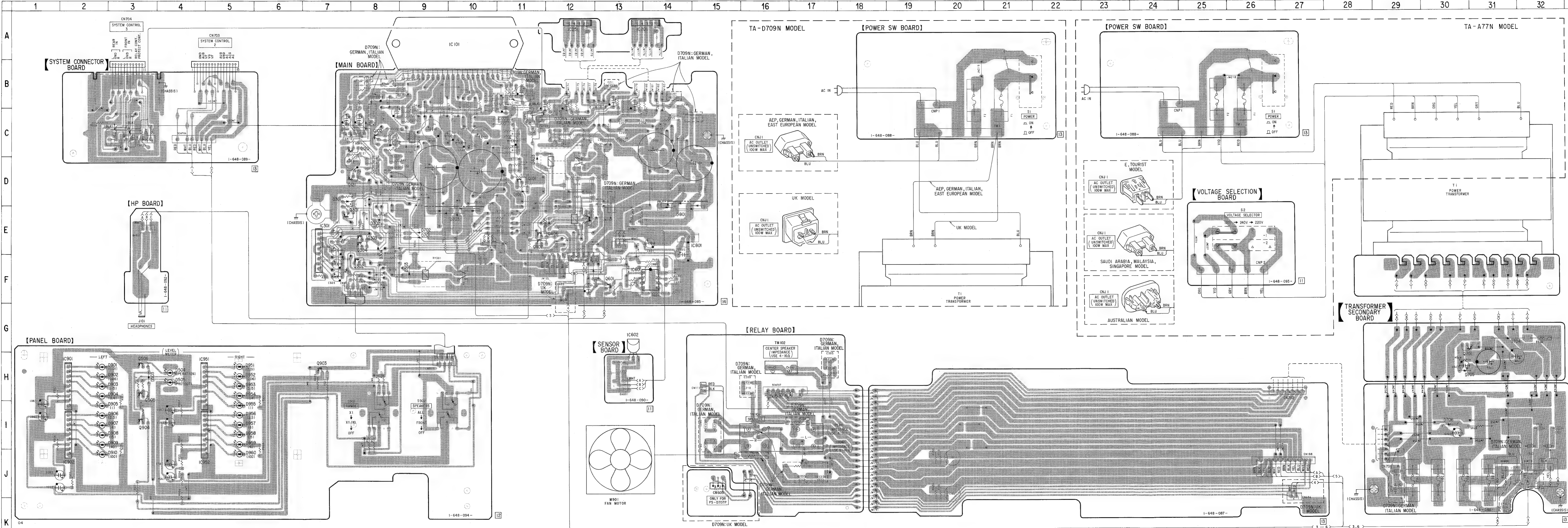
• Semiconductor Location

Ref. No.	Location
D101	D-11
D102	C-8
D301	D-7
D302	E-8
D303	F-9
D304	E-8
D403	C-11
D405	E-12
D503	H-3
D504	H-4
D505	H-4
D601	F-12
D701	E-9
D702	E-9
D703	E-10
D704	G-31
D705	H-30
D706	I-30
D801	E-14
D901	H-2
D902	H-2
D903	H-2
D904	H-2
D905	I-2
D906	I-2
D907	I-2
D908	I-2
D909	I-2
D910	J-2
D951	H-5
D952	H-5
D953	H-5
D954	H-5
D955	I-5
D956	I-5
D957	I-5
D958	I-5
D959	I-5
D960	J-5
IC101	A-10
IC201	A-14
IC251	A-12
IC301	E-7
IC601	F-14
IC602	G-13
IC801	E-14
IC901	H-2
IC902	I-2
IC951	H-4
IC952	I-4
Q101	D-11
Q102	C-8
Q120	C-8
Q121	D-8
Q301	E-7
Q302	F-8
Q303	E-8
Q304	E-8
Q406	E-11
Q407	E-11
Q505	H-3
Q506	H-3
Q601	F-13
Q701	G-30
Q903	H-7
Q904	I-3

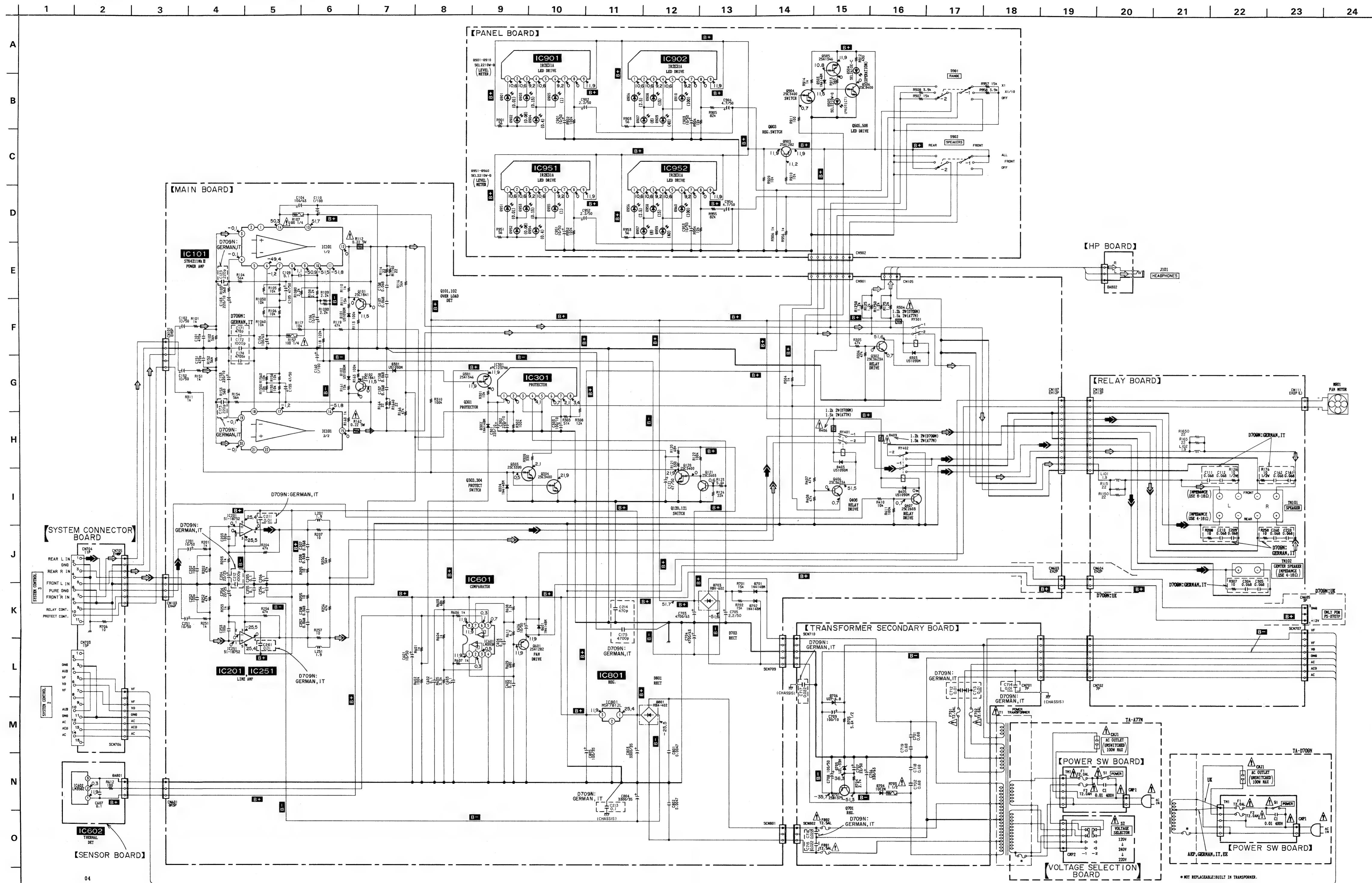
—26—

—27—



—28—



3-9. SCHEMATIC DIAGRAM (TYPE III) • Refer to page 6 for IC Block Diagrams.



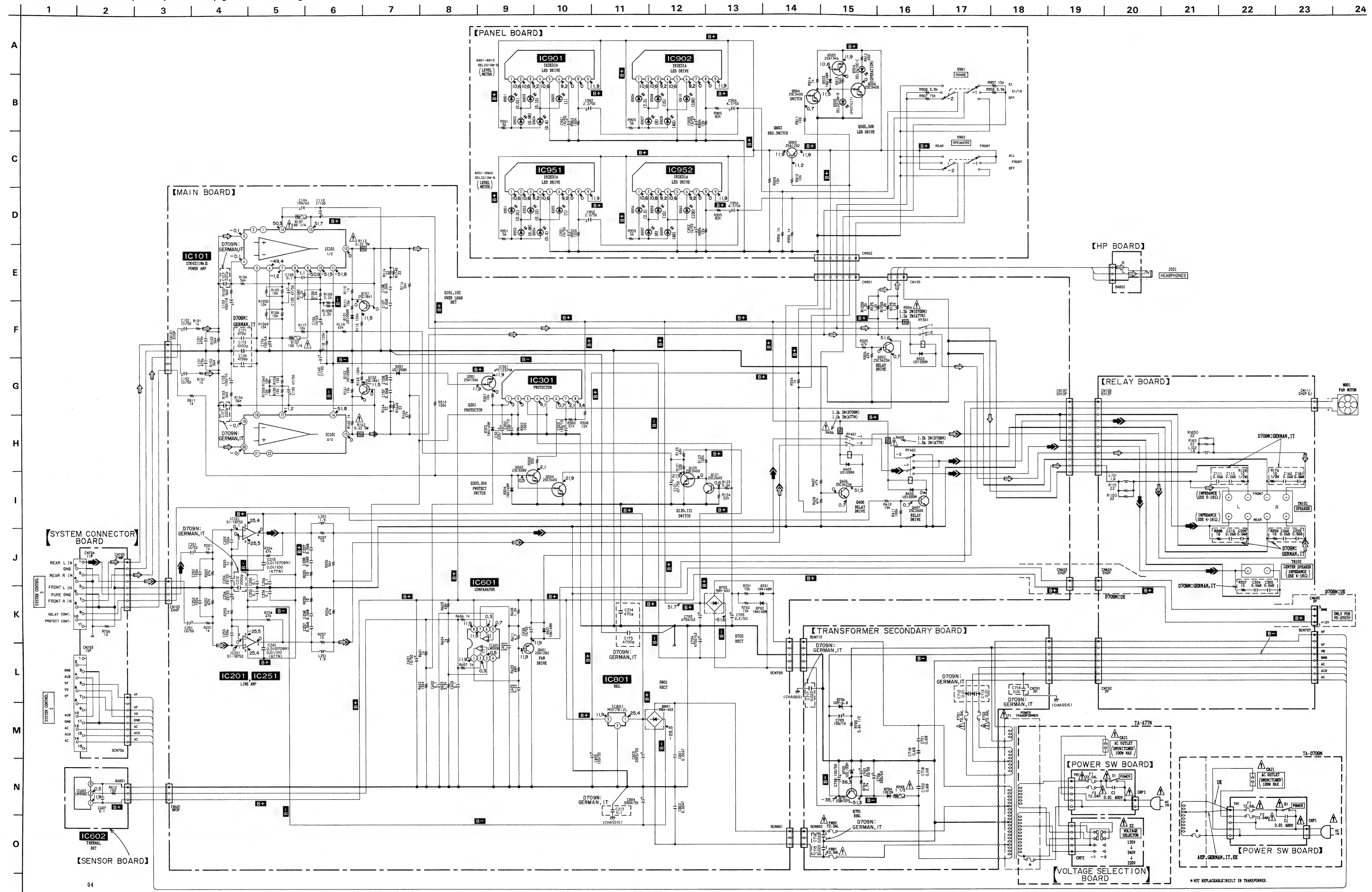
Note:

- All capacitors are in μF unless otherwise noted. pF : μF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $1/4\text{W}$ or less unless otherwise specified.
-  : nonflammable resistor.
-  : fusible resistor.



Note: The components identified by mark or dotted line with mark are critical for safety. Replace only with part number specified.

- Voltage is dc with respect to ground under no-signal conditions.
no mark : POWER ON
- Voltages are taken with a VOM (Input Impedance 10M Ω).
Voltage variations may be noted due to normal production tolerances.
- Signal path.
 - ➡ : PHONO
 - ➡➡ : SURROUND
 - ➡➡➡ : CENTER
- Abbreviations
 IT : Italian model
 EE : East European model

3-10. SCHEMATIC DIAGRAM (TYPE IV) • Refer to page 6 for IC Block Diagrams.



Note:

- All capacitors are in μF unless otherwise noted. pF : μF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}\text{W}$ or less unless otherwise specified.
-  : nonflammable resistor.
-  : fusible resistor.

Note: The components identified by mark or dotted line with mark are critical for safety. Replace only with part number specified.

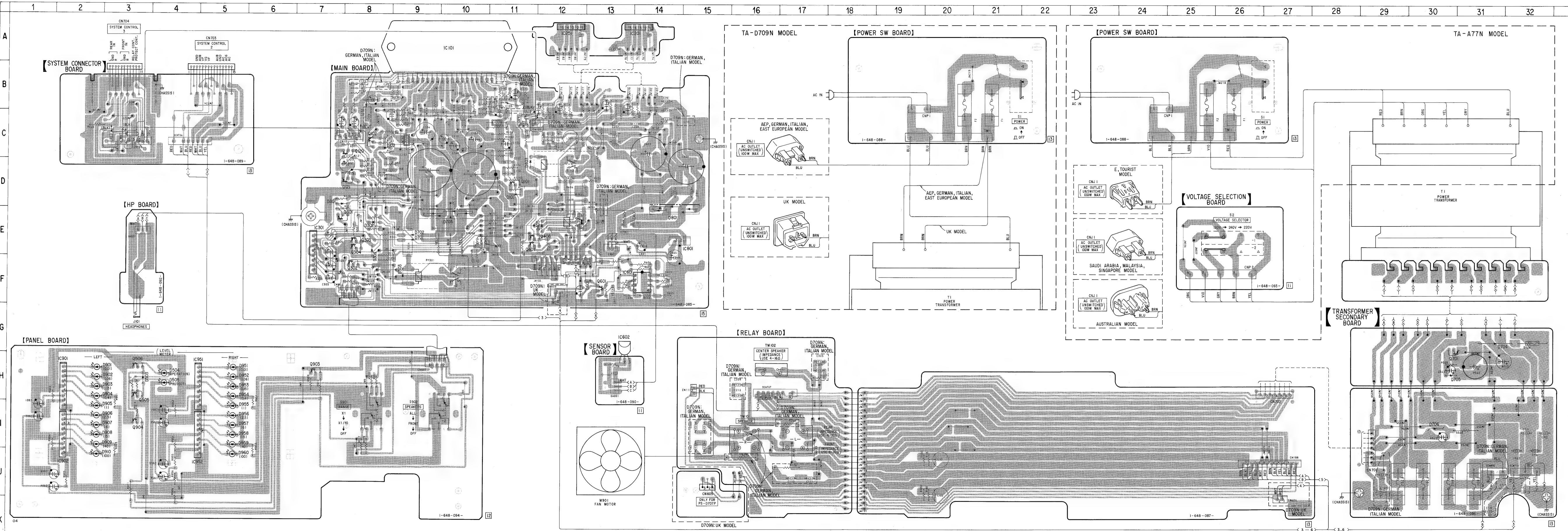
- Voltage is at dc with respect to ground under no-signal conditions
no mark : POWER ON
- Voltages are taken with a VOM (Input Impedance 10M Ω).
Voltage variations may be noted due to normal production tolerances.
- Signal path.
 - ⇒ : PHONO
 - ⇒ : SURROUND
 - ⇒ : CENTER
- Abbreviations
 - IT : Italian model
 - EE : East European model

* NOT REPLACEABLE: BUILT IN TRANSPORTER

3-11. PRINTED WIRING BOARDS (TYPE IV) • Refer to page 5 for Semiconductor Lead Layouts.

Note:

- : parts extracted from the component side.
- : Pattern on the side which is seen.



• Semiconductor Location

Ref. No.	Location
D101	D-11
D102	C-8
D301	D-7
D302	E-8
D303	F-9
D304	E-8
D403	C-11
D405	E-12
D503	H-3
D504	H-4
D505	H-4
D601	F-12
D701	E-9
D702	E-9
D703	E-10
D704	G-31
D705	H-30
D706	I-30
D801	E-14
D901	H-2
D902	H-2
D903	H-2
D904	H-2
D905	I-2
D906	I-2
D907	I-2
D908	I-2
D909	I-2
D910	J-2
D951	H-5
D952	H-5
D953	H-5
D954	H-5
D955	I-5
D956	I-5
D957	I-5
D958	I-5
D959	I-5
D960	J-5
IC101	A-10
IC201	A-14
IC251	A-12
IC301	E-7
IC601	F-14
IC602	G-13
IC801	E-14
IC901	H-2
IC902	I-2
IC951	H-4
IC952	I-4
Q101	D-11
Q102	C-8
Q120	C-8
Q121	D-8
Q301	E-7
Q302	F-8
Q303	E-8
Q304	E-8
Q406	E-11
Q407	E-11
Q505	H-3
Q506	H-3
Q601	F-13
Q701	G-30
Q903	H-7
Q904	I-3

SECTION 4 EXPLODED VIEWS

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.



- -XX and -X mean standardized parts, so they may have some difference from the original one.

- Color Indication of Appearance Parts
- Example :

KNOB, BALANCE (WHITE)... (RED)

Parts	Color	Cabinet's Color
1	Black	Black
2	Black	Black
3	Black	Black
4	Black	Black
5	Black	Black
6	Black	Black
7	Black	Black
8	Black	Black
9	Black	Black
10	Black	Black
11	Black	Black
12	Black	Black
13	Black	Black
14	Black	Black
15	Black	Black
16	Black	Black
17	Black	Black
18	Black	Black
19	Black	Black
20	Black	Black
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24	Black	Black
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26	Black	Black
27	Black	Black
28	Black	Black
29	Black	Black
30	Black	Black
31	Black	Black
32	Black	Black
33	Black	Black
34	Black	Black
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36	Black	Black
37	Black	Black
38	Black	Black
39	Black	Black
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41	Black	Black
42	Black	Black
43	Black	Black
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47	Black	Black
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51	Black	Black
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55	Black	Black
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88	Black	Black
89	Black	Black
90	Black	Black
91	Black	Black
92	Black	Black
93	Black	Black
94	Black	Black
95	Black	Black
96	Black	Black
97	Black	Black
98	Black	Black
99	Black	Black
100	Black	Black

- Hardware (# mark) list is given in the last of this parts list.

The components identified by mark  or dotted line with mark.  are critical for safety. Replace only with part number specified.

- Abbreviations

G : German model

IT : Italian model

AUS : Australian model

EA : Saudi Arabia model

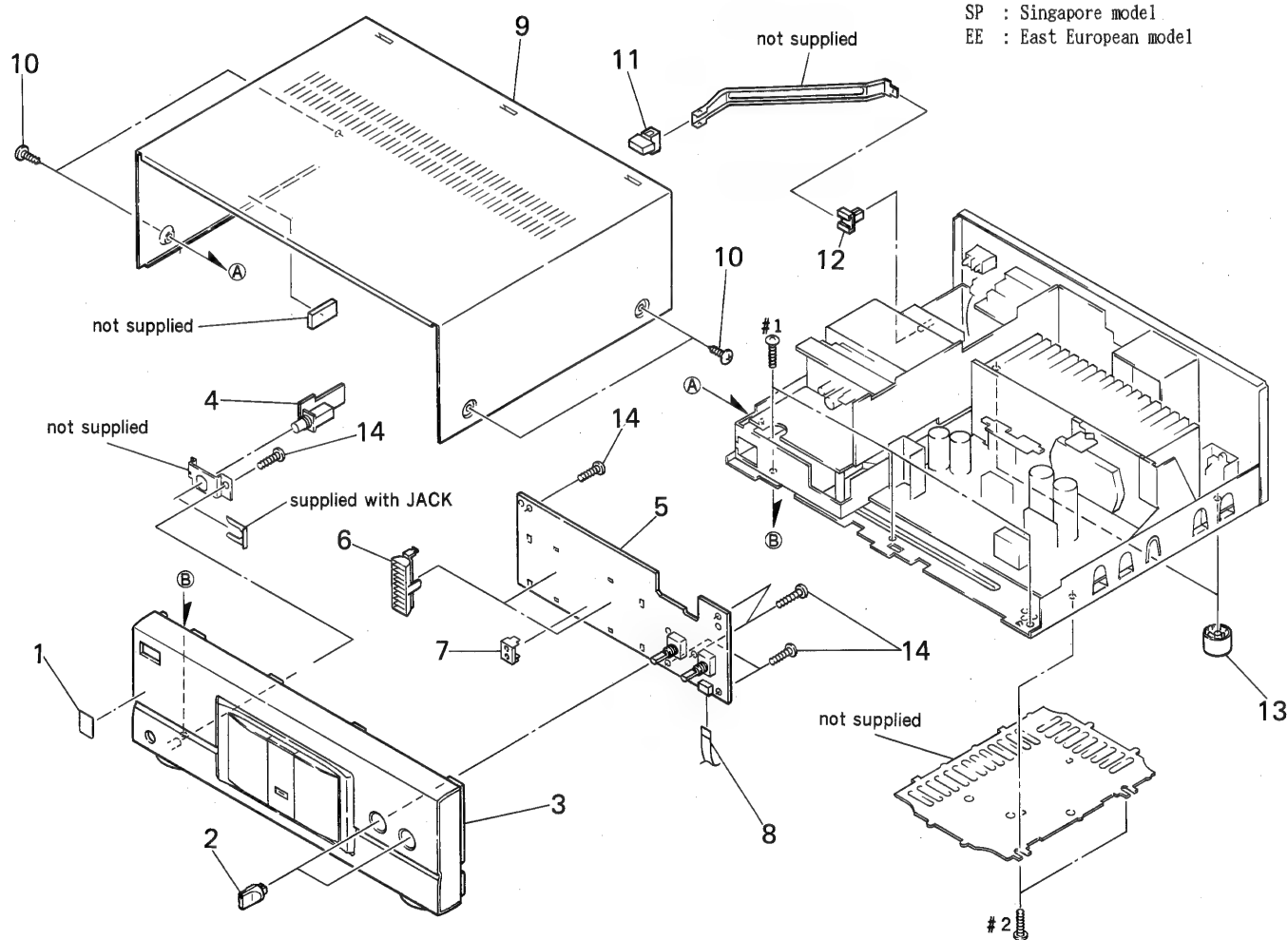
JE : Tourist model

MY : Malaysia model

SP : Singapore model

EE : East European model

4-1. CABINET SECTION

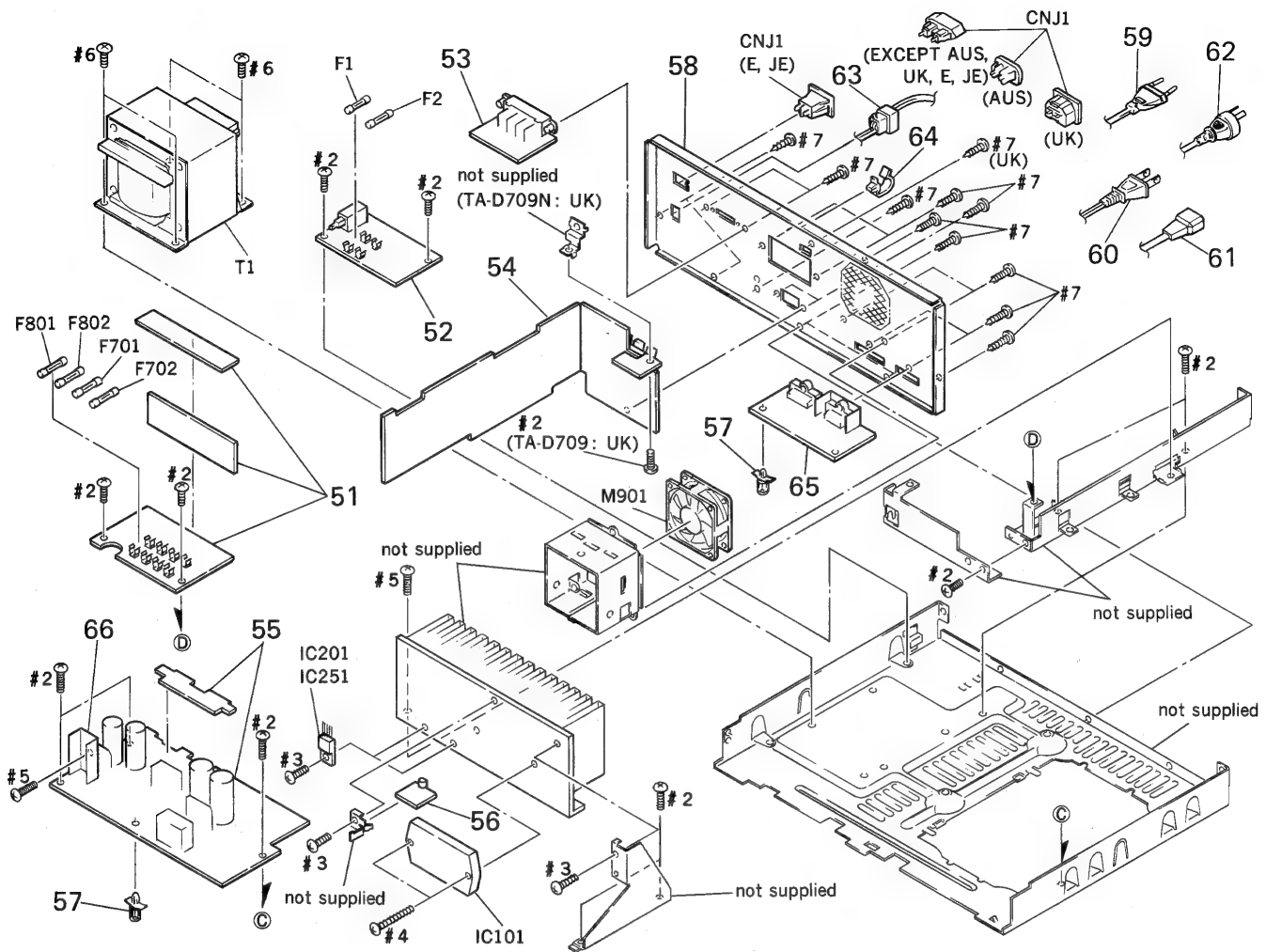


Ref. No.	Part No.	Description	Remark
1	3-703-710-41	STICKER, SONY SYMBOL (12)	
2	X-4944-100-1	KNOB ASSY	
3	X-4943-567-1	PANEL ASSY, FRONT (TA-D709N:AEP, G, IT, EE)	
3	X-4943-683-1	PANEL ASSY, FRONT (TA-A77N)	
3	X-4943-689-1	PANEL ASSY, FRONT (TA-D709N:UK)	
* 4	1-648-092-11	HP BOARD	
* 5	A-4360-763-A	PANEL BOARD, COMPLETE	
* 6	4-928-450-01	HOLDER (L), LED	

Ref. No.	Part No.	Description	Remark
* 7	4-928-444-01	HOLDER (S), LED	
8	1-590-239-31	WIRE, FLAT TYPE (7 CORE)	
* 9	4-949-912-51	CASE	
10	3-363-099-01	SCREW (CASE 3 TP2)	
11	4-942-061-11	BUTTON (P)	
12	4-866-342-00	JOINT (B), KNOB	
13	4-931-169-01	FOOT	
14	4-951-620-01	SCREW (2. 6X8), +BVTP	

4-2. CHASSIS SECTION

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.



Ref. No.	Part No.	Description	Remark
* 51	1-648-086-11	TRANSFORMER SECONDARY BOARD	
* 52	1-648-088-11	POWER SW BOARD	
* 53	1-648-093-11	VOLTAGE SELECTION BOARD (TA-A77N)	
* 54	1-648-087-11	RELAY BOARD	
* 55	A-4360-749-A	MAIN BOARD, COMPLETE (TA-D709N:AEP, EE)	
* 55	A-4360-750-A	MAIN BOARD, COMPLETE (TA-D709N:G, IT)	
* 55	A-4365-102-A	MAIN BOARD, COMPLETE (TA-D709N:UK)	
* 55	A-4365-103-A	MAIN BOARD, COMPLETE (TA-A77N)	
* 56	1-648-090-11	SENSOR BOARD	
* 57	3-350-847-21	HOLDER, PCB	
* 58	4-957-930-01	PANEL, BACK (TA-D709N:AEP1, IT, EE)	
* 58	4-957-930-11	PANEL, BACK (TA-D709N:AEP2)	
* 58	4-957-930-21	PANEL, BACK (TA-D709N:G)	
* 58	4-957-930-31	PANEL, BACK (TA-D709N:UK)	
* 58	4-957-930-41	PANEL, BACK (TA-A77N:AUS)	
* 58	4-957-930-51	PANEL, BACK (TA-A77N:EA)	
* 58	4-957-930-61	PANEL, BACK (TA-A77N:E, JE)	
* 58	4-957-930-71	PANEL, BACK (TA-A77N:MY, SP)	
Δ 59	1-575-654-11	CORD, POWER (TA-A77N:EA, MY, SP/TA-D709N:AEP, G, IT, EE)	
Δ 60	1-575-656-11	CORD, POWER (TA-A77N:E, JE)	
Δ 61	1-575-669-21	CORD, POWER (TA-D709N:UK)	
Δ 62	1-751-355-11	CORD, POWER (TA-A77N:AUS)	

Ref. No.	Part No.	Description	Remark
* 63	3-703-244-00	BUSHING (2104), CORD (TA-A77N:EA, AUS, MY, SP/TA-D709N)	
* 63	3-703-571-11	BUSHING (S) (4516), CORD (TA-A77N:E, JE)	
* 64	4-949-235-01	HOOK	
* 65	1-648-089-11	SYSTEM CONNECTOR BOARD	
* 66	4-880-403-11	HEAT SINK	
Δ CNJ1	1-251-078-11	OUTLET, AC (AC OUTLET) (TA-A77N:AUS)	
Δ CNJ1	1-526-751-00	OUTLET, AC (AC OUTLET) (TA-D709N:UK)	
Δ CNJ1	1-526-794-11	OUTLET, AC (AC OUTLET) (TA-A77N:EA, MY, SP/TA-D709N:AEP, G, IT, EE)	
Δ CNJ1	1-526-882-00	OUTLET, AC (AC OUTLET) (TA-A77N:E, JE)	
Δ F1	1-532-203-00	FUSE (T2. 0AL)	
Δ F2	1-576-228-31	FUSE (H. B. C.) (T2. 0AH)	
Δ F701	1-532-203-00	FUSE (T2. 0AL)	
Δ F702	1-532-203-00	FUSE (T2. 0AL)	
Δ F801	1-532-286-00	FUSE (T2. 5AL)	
Δ F802	1-532-286-00	FUSE (T2. 5AL)	
IC101	8-749-921-04	IC STK-4211MK2	
IC201	8-759-502-32	IC SI18752N	
IC251	8-759-502-32	IC SI18752N	
M901	1-541-860-41	MOTOR, DC FAN	
Δ T1	1-423-662-11	TRANSFORMER, POWER (TA-D709N)	
Δ T1	1-423-664-11	TRANSFORMER, POWER (TA-A77N)	

SECTION 5 ELECTRICAL PARTS LIST

HP

MAIN

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
All resistors are in ohms.
METAL: Metal-film resistor.
METAL OXIDE: Metal oxide-film resistor.
F: nonflammable

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
In each case, u: μ , for example:
uA...: μ A... uPA...: μ PA...
uPB...: μ PB... uPC...: μ PC... uPD...: μ PD...
- CAPACITORS
uF: μ F
- COILS
uH: μ H

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board.

- Abbreviations
G : German model
IT : Italian model
AUS : Australian model
EA : Saudi Arabia model
JE : Tourist model
MY : Malaysia model
SP : Singapore model
EE : East European model

Ref. No.	Part No.	Description	Remark
*	1-648-092-11	HP BOARD ***** < JACK >	
J101	1-507-796-71	JACK (HEADPHONES)	

*	A-4360-749-A	MAIN BOARD, COMPLETE (TA-D709N:AEP, EE)	
*	A-4360-750-A	MAIN BOARD, COMPLETE (TA-D709N:G, IT)	
*	A-4365-102-A	MAIN BOARD, COMPLETE (TA-D709N:UK)	
*	A-4365-103-A	MAIN BOARD, COMPLETE (TA-A77N) *****	
*	4-880-403-11	HEAT SINK	
*	4-942-204-01	PLATE, GROUND	
	7-682-548-04	SCREW +BVTT 3X8 (S) < CAPACITOR >	
C101	1-162-290-31	CERAMIC 470PF	10% 50V
C102	1-126-161-11	ELECT 2.2uF (TYPE I)	20% 50V
C102	1-126-059-11	ELECT 10uF (TYPE II, III, IV)	20% 50V
C103	1-124-995-11	ELECT 220uF (TYPE I, II, III)	20% 10V
C103	1-124-994-11	ELECT 100uF (TYPE IV)	20% 10V
C104	1-124-572-11	ELECT 100uF	20% 63V
C105	1-124-910-11	ELECT 47uF	20% 50V
C106	1-126-059-11	ELECT 10uF	20% 63V
C107	1-136-163-00	FILM 0.068uF	5% 50V
C108	1-136-163-00	FILM 0.068uF	5% 50V
C109	1-136-165-00	FILM 0.1uF	5% 50V
C110	1-124-791-11	ELECT 1uF	20% 100V
C121	1-124-122-11	ELECT 100uF (TYPE I)	20% 50V
C121	1-124-910-11	ELECT 47uF (TYPE II, III, IV)	20% 50V

Ref. No.	Part No.	Description	Remark
C123	1-162-286-31	CERAMIC 220PF (TA-D709N:G, IT) (TYPE II, III, IV)	10% 50V
C151	1-162-290-31	CERAMIC 470PF	10% 50V
C152	1-126-161-11	ELECT 2.2uF (TYPE I)	20% 50V
C152	1-126-059-11	ELECT 10uF (TYPE II, III, IV)	20% 50V
C153	1-124-995-11	ELECT 220uF (TYPE I, II, III)	20% 10V
C153	1-124-994-11	ELECT 100uF (TYPE IV)	20% 10V
C154	1-124-572-11	ELECT 100uF	20% 63V
C155	1-124-910-11	ELECT 47uF	20% 50V
C157	1-136-163-00	FILM 0.068uF	5% 50V
C158	1-136-163-00	FILM 0.068uF	5% 50V
C160	1-124-791-11	ELECT 1.0uF	20% 100V
C171	1-161-377-00	CERAMIC 0.0047uF (TA-D709N:G, IT) (TYPE I)	20% 16V
C171	1-162-290-31	CERAMIC 470PF (TA-D709N:G, IT) (TYPE II, III, IV)	10% 50V
C172	1-161-377-00	CERAMIC 0.0047uF (TA-D709N:G, IT) (TYPE I)	20% 16V
C172	1-162-294-31	CERAMIC 0.001uF (TA-D709N:G, IT) (TYPE II, III, IV)	10% 50V
C173	1-162-286-31	CERAMIC 220PF (TA-D709N:G, IT) (TYPE II, III, IV)	10% 50V
C174	1-161-377-00	CERAMIC 0.0047uF (TA-D709N:G, IT) (TYPE III, IV)	20% 16V
C175	1-161-377-00	CERAMIC 0.0047uF (TA-D709N:G, IT) (TYPE III, IV)	20% 16V
C201	1-126-059-11	ELECT 10uF	20% 50V
C202	1-162-282-31	CERAMIC 100PF	10% 50V
C203	1-162-282-31	CERAMIC 100PF	10% 50V
C204	1-126-049-11	ELECT 22uF	20% 25V
C205	1-136-165-00	FILM 0.1uF	5% 50V
C206	1-136-165-00	FILM 0.1uF	5% 50V
C207	1-136-163-00	FILM 0.068uF	5% 50V
C208	1-136-163-00	FILM 0.068uF	5% 50V

MAIN

Ref. No.	Part No.	Description	Remark
C211	1-136-153-00	FILM 0.01uF 5% 50V (TA-D709N:G, IT) (TYPE II, III)	
C212	1-162-294-31	CERAMIC 0.001uF 10% 50V (TA-D709N:G, IT) (TYPE II, III, IV)	
C213	1-164-159-11	CERAMIC 0.1uF 50V (TA-D709N:G, IT) (TYPE II, III, IV)	
C214	1-162-290-31	CERAMIC 470PF 10% 50V (TA-D709N:G, IT) (TYPE III, IV)	
C215	1-106-367-00	MYLAR 0.01uF 5% 200V (TA-A77N) (TYPE IV)	
C215	1-136-153-00	FILM 0.01uF 5% 50V (TA-D709N) (TYPE IV)	
C251	1-126-059-11	ELECT 10uF 20% 50V	
C252	1-162-282-31	CERAMIC 100PF 10% 50V	
C253	1-162-282-31	CERAMIC 100PF 10% 50V	
C254	1-126-049-11	ELECT 22uF 20% 25V	
C255	1-136-165-00	FILM 0.1uF 5% 50V	
C256	1-136-165-00	FILM 0.1uF 5% 50V	
C257	1-136-163-00	FILM 0.068uF 5% 50V	
C258	1-136-163-00	FILM 0.068uF 5% 50V	
C261	1-136-153-00	FILM 0.01uF 5% 50V (TA-D709N:G, IT) (TYPE II, III)	
C261	1-106-367-00	MYLAR 0.01uF 5% 200V (TA-A77N) (TYPE IV)	
C261	1-136-153-00	FILM 0.01uF 5% 50V (TA-D709N) (TYPE IV)	
C301	1-126-101-11	ELECT 100uF 20% 16V	
C302	1-126-101-11	ELECT 100uF 20% 16V	
C303	1-124-994-11	ELECT 100uF 20% 10V	
C601	1-126-059-11	ELECT 10uF 20% 50V	
C602	1-164-159-11	CERAMIC 0.1uF 50V	
C603	1-164-159-11	CERAMIC 0.1uF 50V	
C604	1-136-169-00	FILM 0.22uF 5% 50V	
C605	1-136-169-00	FILM 0.22uF 5% 50V	
C606	1-126-059-11	ELECT 10uF 20% 50V	
C703	1-107-497-51	ELECT 4700uF 20% 63V	
C704	1-107-497-51	ELECT 4700uF 20% 63V	
C705	1-126-161-11	ELECT 2.2uF 20% 50V	
C801	1-130-479-00	MYLAR 0.0047uF 5% 50V	
C802	1-130-479-00	MYLAR 0.0047uF 5% 50V	
C803	1-126-860-11	ELECT 3300uF 20% 35V	
C804	1-126-860-11	ELECT 3300uF 20% 35V	
C805	1-124-122-11	ELECT 100uF 20% 50V	

< CONNECTOR >

* CN101	1-564-508-11	PLUG, CONNECTOR 5P
* CN103	1-564-507-11	PLUG, CONNECTOR 4P
* CN105	1-564-337-61	PIN, CONNECTOR 3P
* CN107	1-564-515-11	PLUG, CONNECTOR 12P
* CN601	1-564-337-00	PIN, CONNECTOR 3P

Ref. No.	Part No.	Description	Remark
CN603	1-564-505-11	PLUG, CONNECTOR 2P (TA-D709N:UK)	
* CN901	1-568-826-11	SOCKET, CONNECTOR 7P	

< DIODE >

D101	8-719-815-85	DIODE 1S1585
D102	8-719-815-85	DIODE 1S1585
D301	8-719-815-85	DIODE 1S1585
D302	8-719-987-63	DIODE 1N4148M
D303	8-719-815-85	DIODE 1S1585
D304	8-719-987-63	DIODE 1N4148M
D403	8-719-815-85	DIODE 1S1585
D405	8-719-815-85	DIODE 1S1585
D601	8-719-987-63	DIODE 1N4148M
D701	8-719-987-63	DIODE 1N4148M
D702	8-719-987-63	DIODE 1N4148M
D703	8-719-302-38	DIODE RBV-602-01
D801	8-719-312-09	DIODE RBA-402

< IC >

IC101	8-749-921-04	IC STK-4211MK2
IC201	8-759-502-32	IC SI18752N
IC251	8-759-502-32	IC SI18752N
IC301	8-759-111-68	IC uPC1237HA
IC601	8-759-103-93	IC uPC393C
IC801	8-759-231-58	IC TA7812S

< COIL >

L101	1-420-872-00	COIL, AIR CORE (TYPE I)
L102	1-420-872-00	COIL, AIR CORE (TYPE I)
L201	1-420-872-00	COIL, AIR CORE
L251	1-420-872-00	COIL, AIR CORE

< TRANSISTOR >

Q101	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA
Q102	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA
Q120	8-729-900-36	TRANSISTOR DTC124ES
Q121	8-729-620-05	TRANSISTOR 2SC2603-EF
Q301	8-729-900-63	TRANSISTOR DTA124ES
Q302	8-729-141-30	TRANSISTOR 2SC3623A-LK
Q303	8-729-900-89	TRANSISTOR DTC144ES
Q304	8-729-900-36	TRANSISTOR DTC124ES
Q406	8-729-141-30	TRANSISTOR 2SC3623A-LK
Q407	8-729-620-05	TRANSISTOR 2SC2603-EF
Q601	8-729-140-93	TRANSISTOR 2SB733-34

< RESISTOR >

R101	1-249-417-11	CARBON 1K 5% 1/4W
R102	1-249-438-11	CARBON 56K 5% 1/4W

Ref. No.	Part No.	Description	Remark		
R103	1-249-414-11	CARBON	560	5%	1/4W
R104	1-249-438-11	CARBON	56K	5%	1/4W
R105	1-249-429-11	CARBON	10K	5%	1/4W
R106	1-249-429-11	CARBON	10K	5%	1/4W
△R107	1-212-881-11	FUSIBLE	100	5%	1/4W F
R108	1-249-421-11	CARBON	2. 2K	5%	1/4W
R109	1-249-421-11	CARBON	2. 2K	5%	1/4W
R110	1-249-417-11	CARBON	1K	5%	1/4W
R111	1-249-431-11	CARBON	15K	5%	1/4W
△R112	1-217-156-00	METAL PLATE	0. 22	10%	5W F
R113	1-249-441-11	CARBON	100K	5%	1/4W
R114	1-249-397-11	CARBON	22	5%	1/4W
R115	1-249-397-11	CARBON (TYPE I)	22	5%	1/4W
R116	1-249-438-11	CARBON	56K	5%	1/4W
R117	1-249-429-11	CARBON	10K	5%	1/4W
R118	1-247-881-00	CARBON	120K	5%	1/4W
R119	1-249-437-11	CARBON	47K	5%	1/4W
R120	1-249-439-11	CARBON	68K	5%	1/4W
R121	1-249-411-11	CARBON	330	5%	1/4W
R122	1-249-441-11	CARBON	100K	5%	1/4W
R123	1-249-426-11	CARBON	5. 6K	5%	1/4W
R124	1-249-433-11	CARBON	22K	5%	1/4W
R125	1-249-418-11	CARBON	1. 2K	5%	1/4W
R151	1-249-417-11	CARBON	1K	5%	1/4W
R152	1-249-438-11	CARBON	56K	5%	1/4W
R153	1-249-414-11	CARBON	560	5%	1/4W
R154	1-249-438-11	CARBON	56K	5%	1/4W
R155	1-249-429-11	CARBON	10K	5%	1/4W
R156	1-249-429-11	CARBON	10K	5%	1/4W
△R157	1-212-881-11	FUSIBLE	100	5%	1/4W F
R160	1-249-417-11	CARBON	1K	5%	1/4W
R161	1-249-431-11	CARBON	15K	5%	1/4W
△R162	1-217-156-00	METAL PLATE	0. 22	10%	5W F
R163	1-249-441-11	CARBON	100K	5%	1/4W
R164	1-249-397-11	CARBON	22	5%	1/4W
R165	1-249-397-11	CARBON (TYPE I)	22	5%	1/4W
R166	1-249-437-11	CARBON	47K	5%	1/4W
R175	1-249-418-11	CARBON	1. 2K	5%	1/4W
R201	1-249-417-11	CARBON	1K	5%	1/4W
R202	1-249-437-11	CARBON	47K	5%	1/4W
R203	1-249-417-11	CARBON	1K	5%	1/4W
R204	1-249-437-11	CARBON	47K	5%	1/4W
R205	1-249-393-11	CARBON	10	5%	1/4W
R206	1-249-438-11	CARBON	56K	5%	1/4W
R207	1-249-393-11	CARBON	10	5%	1/4W
R251	1-249-417-11	CARBON	1K	5%	1/4W
R252	1-249-437-11	CARBON	47K	5%	1/4W

Ref. No.	Part No.	Description	Remark		
R253	1-249-417-11	CARBON	1K	5%	1/4W
R254	1-249-437-11	CARBON	47K	5%	1/4W
R255	1-249-393-11	CARBON	10	5%	1/4W
R256	1-249-437-11	CARBON	47K	5%	1/4W
R257	1-249-393-11	CARBON	10	5%	1/4W
R301	1-249-429-11	CARBON	10K	5%	1/4W
R302	1-249-441-11	CARBON	100K	5%	1/4W
R303	1-247-872-11	CARBON	51K	5%	1/4W
△R304	1-215-893-11	METAL OXIDE (TA-A77N)	1. 5K	5%	2W F
△R304	1-216-457-00	METAL OXIDE (TA-D709N)	1. 2K	5%	2W F
R305	1-249-437-11	CARBON	47K	5%	1/4W
R306	1-249-437-11	CARBON	47K	5%	1/4W
R308	1-249-430-11	CARBON	12K	5%	1/4W
R309	1-249-411-11	CARBON	330	5%	1/4W
R310	1-249-441-11	CARBON	100K	5%	1/4W
R311	1-249-417-11	CARBON	1K	5%	1/4W
△R406	1-215-893-11	METAL OXIDE (TA-A77N)	1. 5K	5%	2W F
△R406	1-216-457-00	METAL OXIDE (TA-D709N)	1. 2K	5%	2W F
R407	1-249-437-11	CARBON	47K	5%	1/4W
R408	1-249-437-11	CARBON	47K	5%	1/4W
△R409	1-215-893-11	METAL OXIDE (TA-A77N)	1. 5K	5%	2W F
△R409	1-216-457-00	METAL OXIDE (TA-D709N)	1. 2K	5%	2W F
R410	1-249-429-11	CARBON	10K	5%	1/4W
R411	1-249-441-11	CARBON	100K	5%	1/4W
R504	1-249-417-11	CARBON	1K	5%	1/4W
R601	1-249-417-11	CARBON	1K	5%	1/4W
R602	1-249-441-11	CARBON	100K	5%	1/4W
R603	1-249-439-11	CARBON	68K	5%	1/4W
R604	1-249-417-11	CARBON	1K	5%	1/4W
R605	1-249-423-11	CARBON	3. 3K	5%	1/4W
R606	1-249-417-11	CARBON	1K	5%	1/4W
R607	1-249-417-11	CARBON	1K	5%	1/4W
R608	1-249-418-11	CARBON	1. 2K	5%	1/4W
R609	1-249-415-11	CARBON	680	5%	1/4W
R611	1-249-389-11	CARBON	4. 7	5%	1/4W
R701	1-249-431-11	CARBON	15K	5%	1/4W
R702	1-249-431-11	CARBON	15K	5%	1/4W
R1050	1-249-429-11	CARBON	10K	5%	1/4W
R1060	1-249-429-11	CARBON	10K	5%	1/4W
R1080	1-249-421-11	CARBON	2. 2K	5%	1/4W
R1090	1-249-421-11	CARBON	2. 2K	5%	1/4W
R1140	1-249-397-11	CARBON	22	5%	1/4W
R1150	1-249-397-11	CARBON (TYPE I)	22	5%	1/4W

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

MAIN

PANEL

POWER SW

Ref.No.	Part No.	Description	Remark		
R1250	1-249-418-11	CARBON	1.2K	5%	1/4W
R1550	1-249-429-11	CARBON	10K	5%	1/4W
R1560	1-249-429-11	CARBON	10K	5%	1/4W
R1640	1-249-397-11	CARBON	22	5%	1/4W
R1650	1-249-397-11	CARBON	22	5%	1/4W
		(TYPE I)			
R1750	1-249-418-11	CARBON	1.2K	5%	1/4W
		< RELAY >			
RY301	1-515-765-11	RELAY			
RY401	1-515-920-11	RELAY (24V)			
RY402	1-515-360-21	RELAY			

*	A-4360-763-A	PANEL BOARD, COMPLETE			

*	4-928-444-01	HOLDER (S), LED			
*	4-928-450-01	HOLDER (L), LED			
		< CAPACITOR >			
C901	1-126-059-11	ELECT	10uF	20%	50V
C902	1-126-161-11	ELECT	2.2uF	20%	50V
C903	1-126-059-11	ELECT	10uF	20%	50V
C904	1-126-163-11	ELECT	4.7uF	20%	50V
C951	1-126-059-11	ELECT	10uF	20%	50V
C952	1-126-161-11	ELECT	2.2uF	20%	50V
C953	1-126-059-11	ELECT	10uF	20%	50V
C954	1-126-163-11	ELECT	4.7uF	20%	50V
		< CONNECTOR >			
* CN902	1-568-850-11	SOCKET, CONNECTOR 7P			
		< DIODE >			
D503	8-719-987-63	DIODE 1N4148M			
D504	8-719-301-44	LED SEL2410E-D (OPERATION)			
D505	8-719-302-75	LED SEL2210W-D (PROTECT)			
D901-910					
	8-719-302-75	LED SEL2210W-D (PEAK LEVEL METER)			
D951-960					
	8-719-302-75	LED SEL2210W-D (PEAK LEVEL METER)			
		< IC >			
IC901	8-759-917-42	IC IR2E31A			
IC902	8-759-917-42	IC IR2E31A			
IC951	8-759-917-42	IC IR2E31A			
IC952	8-759-917-42	IC IR2E31A			
		< TRANSISTOR >			
Q505	8-729-900-63	TRANSISTOR DTA124ES			

Ref.No.	Part No.	Description	Remark		
Q506	8-729-900-36	TRANSISTOR DTC124ES			
Q903	8-729-140-93	TRANSISTOR 2SB733-34			
Q904	8-729-900-36	TRANSISTOR DTC124ES			
		< RESISTOR >			
R901	1-249-402-11	CARBON	56	5%	1/4W
R902	1-249-441-11	CARBON	100K	5%	1/4W
R903	1-249-402-11	CARBON	56	5%	1/4W
R904	1-249-429-11	CARBON	10K	5%	1/4W
R905	1-249-440-11	CARBON	82K	5%	1/4W
R906	1-249-417-11	CARBON	1K	5%	1/4W
R907	1-249-431-11	CARBON	15K	5%	1/4W
R908	1-249-424-11	CARBON	3.9K	5%	1/4W
R909	1-249-429-11	CARBON	10K	5%	1/4W
R910	1-249-429-11	CARBON	10K	5%	1/4W
R911	1-249-405-11	CARBON	100	5%	1/4W
R912	1-247-822-11	CARBON	430	5%	1/4W
R913	1-249-414-11	CARBON	560	5%	1/4W
R914	1-249-417-11	CARBON	1K	5%	1/4W
R951	1-249-402-11	CARBON	56	5%	1/4W
R952	1-249-441-11	CARBON	100K	5%	1/4W
R953	1-249-402-11	CARBON	56	5%	1/4W
R954	1-249-429-11	CARBON	10K	5%	1/4W
R955	1-249-440-11	CARBON	82K	5%	1/4W
R956	1-249-417-11	CARBON	1K	5%	1/4W
R957	1-249-431-11	CARBON	15K	5%	1/4W
R958	1-249-424-11	CARBON	3.9K	5%	1/4W
		< SWITCH >			
S901	1-692-479-11	SWITCH, ROTARY (RANGE)			
S902	1-692-479-11	SWITCH, ROTARY (SPEAKERS)			

*	1-648-088-11	POWER SW BOARD			

*	1-533-213-31	HOLDER, FUSE			
		< CAPACITOR >			
△C1	1-161-744-00	CERAMIC	0.01uF		400V
		< CONNECTOR >			
* CNP1	1-564-321-00	PIN, CONNECTOR 2P			
		< SWITCH >			
△S1	1-554-920-51	SWITCH, PUSH (AC POWER) (1 KEY) (POWER)			

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

POWER SW

RELAY

SENSOR

SYSTEM CONNECTOR

TRANSFORMER SECONDARY

Ref.No.	Part No.	Description	Remark
< BASE POST >			
* TM1	1-535-142-00	BASE POST 19MM (10MM PITCH) 5P	

*	1-648-087-11	RELAY BOARD	

< CAPACITOR >			
C111	1-136-163-00	FILM 0.068uF 5% 50V (TA-D709N:G, IT)	
C112	1-136-163-00	FILM 0.068uF 5% 50V (TA-D709N:G, IT)	
C161	1-136-163-00	FILM 0.068uF 5% 50V (TA-D709N:G, IT)	
C162	1-136-163-00	FILM 0.068uF 5% 50V (TA-D709N:G, IT)	
C209	1-136-163-00	FILM 0.068uF 5% 50V (TA-D709N:G, IT)	
C210	1-136-163-00	FILM 0.068uF 5% 50V (TA-D709N:G, IT)	
C259	1-136-163-00	FILM 0.068uF 5% 50V (TA-D709N:G, IT)	
C260	1-136-163-00	FILM 0.068uF 5% 50V (TA-D709N:G, IT)	
C304	1-136-163-00	FILM 0.068uF 5% 50V (TA-D709N:G, IT)	
C305	1-136-163-00	FILM 0.068uF 5% 50V (TA-D709N:G, IT)	
< CONNECTOR >			
* CN108	1-564-515-11	PLUG, CONNECTOR 12P	
CN111	1-564-517-11	PLUG, CONNECTOR 2P	
CN604	1-564-505-11	PLUG, CONNECTOR 2P (TA-D709N:UK)	
* CN605	1-566-210-11	PIN, CONNECTOR 3P (ONLY FOR PS-D707P) (TA-D709N:UK)	
* CN702	1-569-493-11	SOCKET, CONNECTOR 7P	
< COIL >			
L101	1-420-872-00	COIL, AIR CORE (TYPE II, III, IV)	
L102	1-420-872-00	COIL, AIR CORE (TYPE II, III, IV)	
< RESISTOR >			
R115	1-249-397-11	CARBON 22 5% 1/4W (TYPE II, III, IV)	
R126	1-247-727-11	CARBON 10 5% 1/2W (TA-D709N:G, IT)	
R165	1-249-397-11	CARBON 22 5% 1/4W (TYPE II, III, IV)	
R176	1-247-727-11	CARBON 10 5% 1/2W (TA-D709N:G, IT)	
R208	1-249-393-11	CARBON 10 5% 1/4W (TA-D709N:G, IT)	

Ref.No.	Part No.	Description	Remark
R258	1-249-393-11	CARBON 10 5% 1/4W (TA-D709N:G, IT)	
R307	1-249-393-11	CARBON 10 5% 1/4W (TA-D709N:G, IT)	
R1150	1-249-397-11	CARBON 22 5% 1/4W (TYPE II, III, IV)	
R1650	1-249-397-11	CARBON 22 5% 1/4W (TYPE II, III, IV)	
< TERMINAL >			
TM101	1-537-552-11	TERMINAL, PUSH (8P) (SPEAKER)	
TM102	1-537-551-11	TERMINAL, PUSH (2P) (CENTER SPEAKER)	

*	1-648-090-11	SENSOR BOARD	

< CAPACITOR >			
C607	1-164-159-11	CERAMIC 0.1uF 50V	
< IC >			
IC602	8-759-947-34	IC LM35DZ	
< RESISTOR >			
R612	1-249-405-11	CARBON 100 5% 1/4W	

*	1-648-089-11	SYSTEM CONNECTOR BOARD	

< CONNECTOR >			
* CN703	1-566-859-11	SOCKET, CONNECTOR 15P (SYSTEM CONTROL 2)	
* CN704	1-566-858-31	SOCKET, CONNECTOR 11P (SYSTEM CONTROL 3)	
CN705	1-564-511-11	PLUG, CONNECTOR 8P	
< RESISTOR >			
R706	1-249-393-11	CARBON 10 5% 1/4W	

*	1-648-086-11	TRANSFORMER SECONDARY BOARD	

< CAPACITOR >			
C701	1-106-375-12	MYLAR 0.022uF 5% 200V (TYPE I)	
C701	1-136-175-00	FILM 0.68uF 5% 50V (TYPE II, III, IV)	
C702	1-106-375-12	MYLAR 0.022uF 5% 200V (TYPE I)	
C702	1-136-175-00	FILM 0.68uF 5% 50V (TYPE II, III, IV)	

TRANSFORMER SECONDARY

VOLTAGE SELECTION

Ref. No.	Part No.	Description	Remark
C706	1-124-920-11	ELECT 330uF 20% 63V	
C707	1-126-233-11	ELECT 22uF 20% 50V	
C708	1-124-122-11	ELECT 100uF 20% 50V	
C709	1-124-994-11	ELECT 100uF 20% 10V	
C712	1-136-153-00	FILM 0.01uF 5% 50V (TA-D709N:G, IT) (TYPE II, III, IV)	
C713	1-136-153-00	FILM 0.01uF 5% 50V (TA-D709N:G, IT) (TYPE II, III, IV)	
C714	1-162-306-11	CERAMIC 0.01uF 20% 16V (TA-D709N:G, IT) (TYPE II, III, IV)	
C715	1-136-157-00	FILM 0.022uF 5% 50V (TA-D709N:G, IT) (TYPE II, III, IV)	
C716	1-136-157-00	FILM 0.022uF 5% 50V (TA-D709N:G, IT) (TYPE II, III, IV)	
C717	1-161-494-00	CERAMIC 0.022uF 25V (TA-D709N:G, IT) (TYPE II, III, IV)	
C718	1-136-175-00	FILM 0.68uF 5% 50V	
C719	1-136-175-00	FILM 0.68uF 5% 50V	

< CONNECTOR >

* CN701 1-569-502-11 PIN, CONNECTOR 7P

< DIODE >

D704 8-719-200-77 DIODE 10E2N
 D705 8-719-002-67 DIODE UZL-33H
 D706 8-719-014-88 DIODE UZP-6.8BC

< TRANSISTOR >

Q701 8-729-141-83 TRANSISTOR 2SB1094-LK

< RESISTOR >

△R703 1-212-934-00 FUSIBLE 1 5% 1/2W F
 R704 1-249-422-11 CARBON 2.7K 5% 1/4W
 R705 1-247-761-11 CARBON 5.6K 5% 1/2W

* 1-648-093-11 VOLTAGE SELECTION BOARD (TA-A77N)

< CONNECTOR >

* CNP2 1-573-565-11 PIN, CONNECTOR 5P (TA-A77N)

< SWITCH >

△S2 1-572-009-11 SELECTOR, VOLTAGE (VOLTAGE SELECTOR)
 (TA-A77N)

Ref. No.	Part No.	Description	Remark
		MISCELLANEOUS *****	
8	1-590-239-31	WIRE, FLAT TYPE (7 CORE)	
△59	1-575-654-11	CORD, POWER (TA-A77N:EA, MY, SP/TA-D709N:AEP, G, IT, EE)	
△60	1-575-656-11	CORD, POWER (TA-A77N:E, JE)	
△61	1-575-669-21	CORD, POWER (TA-D709N:UK)	
△62	1-751-355-11	CORD, POWER (TA-A77N:AUS)	
△CNJ1	1-251-078-11	OUTLET, AC (AC OUTLET) (TA-A77N:AUS)	
△CNJ1	1-526-751-00	OUTLET, AC (AC OUTLET) (TA-D709N:UK)	
△CNJ1	1-526-794-11	OUTLET, AC (AC OUTLET) (TA-A77N:EA, MY, SP/TA-D709N:AEP, G, IT, EE)	
△CNJ1	1-526-882-00	OUTLET, AC (AC OUTLET) (TA-A77N:E, JE)	
△F1	1-532-203-00	FUSE (T2.0AL)	
△F2	1-576-228-31	FUSE (H.B.C.) (T2.0AH)	
△F701	1-532-203-00	FUSE (T2.0AL)	
△F702	1-532-203-00	FUSE (T2.0AL)	
△F801	1-532-286-00	FUSE (T2.5AL)	
△F802	1-532-286-00	FUSE (T2.5AL)	
M901	1-541-860-41	MOTOR, DC FAN	
△T1	1-423-662-11	TRANSFORMER, POWER (TA-D709N)	
△T1	1-423-664-11	TRANSFORMER, POWER (TA-A77N)	

 HARDWARE LIST

#1 7-685-646-79 SCREW +BVTP 3X8 TYPE2 N-S
 #2 7-682-547-09 SCREW +BVTT 3X6 (S)
 #3 7-685-646-81 SCREW +BVTP 3X8 TYPE2
 #4 7-685-650-79 SCREW +BVTP 3X16 TYPE2
 #5 7-682-548-04 SCREW +BVTT 3X8 (S)
 #6 7-682-560-04 SCREW +BVTT 4X6 (S)
 #7 7-621-849-00 SCREW (BV/RING)

The components identified by
 mark △ or dotted line with mark.
 △ are critical for safety.
 Replace only with part number
 specified.

TC-D709

SERVICE MANUAL

- TC-D709 is deck section in LBT-A67CD/A67CDM/D609CD.

*AEP Model
UK Model
E Model
Australian Model
Tourist Model*

TC-D709 is based on model TC-D707.

As only difference parts of TC-D707 in this service manual.

Refer to TC-D707 service manual previously issued for the other information.

DIFFERENCE PARTS LIST

TC-D707 service manual				TC-D709
Page	Ref. No.	Description	Part No. (Destination)	Part No.
25	1	LID (A) ASSY, CASSETTE	X-3364-983-1 (except for IT) X-3364-984-1 (IT)	X-3364-983-1
	2	LID (B) ASSY, CASSETTE	X-3364-985-1 (except for IT) X-3364-986-1 (IT)	X-3366-401-1
	10	CASE	*4-939-803-31 (except for IT) *4-939-803-71 (IT)	*4-939-803-31
	11	PANEL, BACK	*3-377-136-51 (except for G) *3-377-136-61 (G)	*3-387-099-31 (except for G) *3-387-099-42 (G)
26	51	PANEL ASSY, FRONT	X-3364-708-1 (except for IT) X-3364-709-1 (IT)	X-3364-708-1
	55	KNOB (SLIDE)	*3-377-120-01 (except for IT) *3-377-120-11 (IT)	*3-377-120-01

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

STEREO CASSETTE DECK
SONY®

TC-D707

SERVICE MANUAL

*AEP Model
UK Model
E Model
Australian Model*



• This set is the cassette deck section in LBT-D707CD/D707CDM.

Model Name Using Similar Mechanism		TC-H1600/WR590
Tape Transport Mechanism Type	DECK A	TCM-190RA12C
	DECK B	TCM-190RB12C

SPECIFICATIONS


Recording system	4-track 2-channel stereo
Frequency response	DOLBY NR OFF With Type IV cassette (Sony METAL-ES) 30 Hz to 15 kHz (± 3 dB) With Type II cassette (Sony UX-S) 40 Hz to 14 kHz (± 3 dB) With Type I cassette (Sony HF-S) 40 Hz to 14 kHz (± 3 dB)
Wow and flutter	$\pm 0.2\%$ W.PEAK (DIN)
Weight	Approx. 3.5 kg (8 lb 1 oz)
Dimensions	Approx. 355 x 131 x 304 mm (14 x 5 $\frac{1}{4}$ x 12 inches) (w/h/d, including projections)

Design and specifications are subject to change without notice.

Note

This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

Dolby noise reduction and HX Pro headroom extension manufactured under license from Dolby Laboratories Licensing Corporation. HX Pro originated by Bang & Olufsen.



"DOLBY", the double-D symbol  and "HX PRO" are trademarks of Dolby Laboratories Licensing Corporation.

STEREO CASSETTE DECK
SONY[®]

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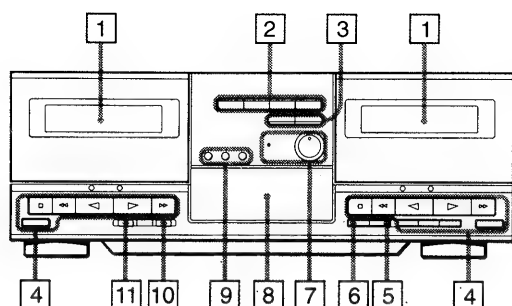
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SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK  OR DOTTED LINE WITH MARK  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SECTION 1 GENERAL

This section is extracted
from instruction manual.



- 1 Cassette holders
- 2 AUTO CD SYNCHRO REC buttons and indicators
C.(Cross) FADE (29)
FADE (28)
EDIT (31)
TIME (31)
- 3 SYNCHRO DUBBING buttons . (24)
- 4 Tape operation buttons
◀◀ Leftward fast winding/AMS*, ▶▶ Rightward fast winding/AMS*, ▶ Forward play, ◀ Reverse play, ■ Stop, ▲ EJECT, ■ PAUSE (deck B only), ○ REC MUTE Record muting (deck B only), ● REC Record (deck B only)
- 5 FADER button (22)
- 6 ARL (Automatic recording level) button and indicator (21)
- 7 REC (recording) LEVEL control and indicator (20)
- 8 Display window
- 9 COUNTER setting buttons (19)
A/B, MEMORY and RESET button
- 10 DOLBY NR (noise reduction) selector (20)
- 11 DIRECTION MODE selector (17, 20, 24)

* AMS is the abbreviation of Automatic Music Sensor.

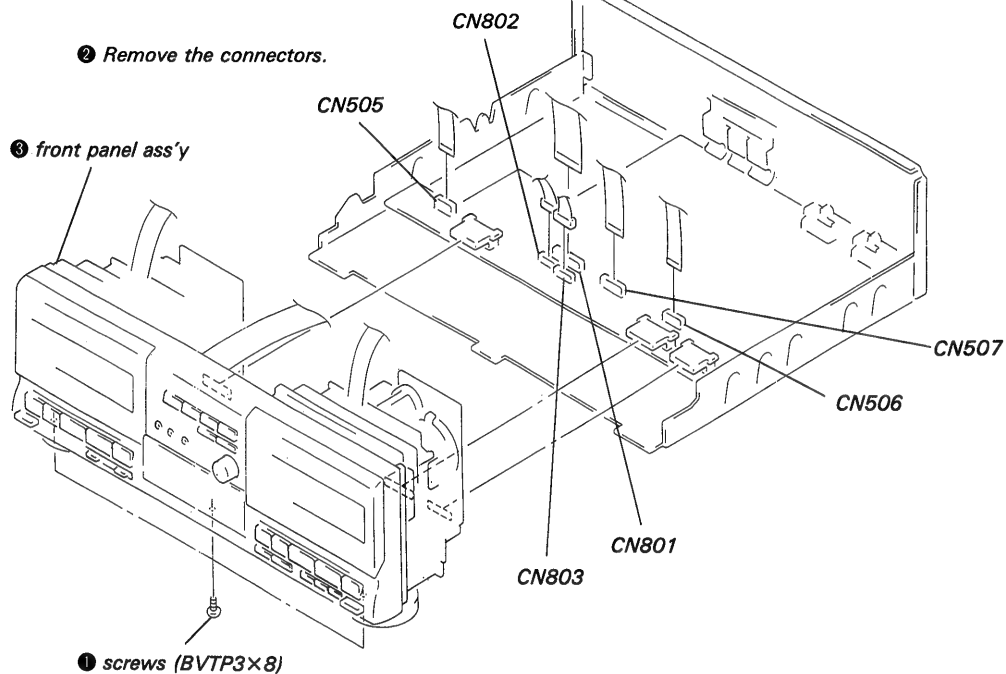
SECTION 2 DISASSEMBLY

NOTE: Follow the disassembly procedure in the numerical order given.

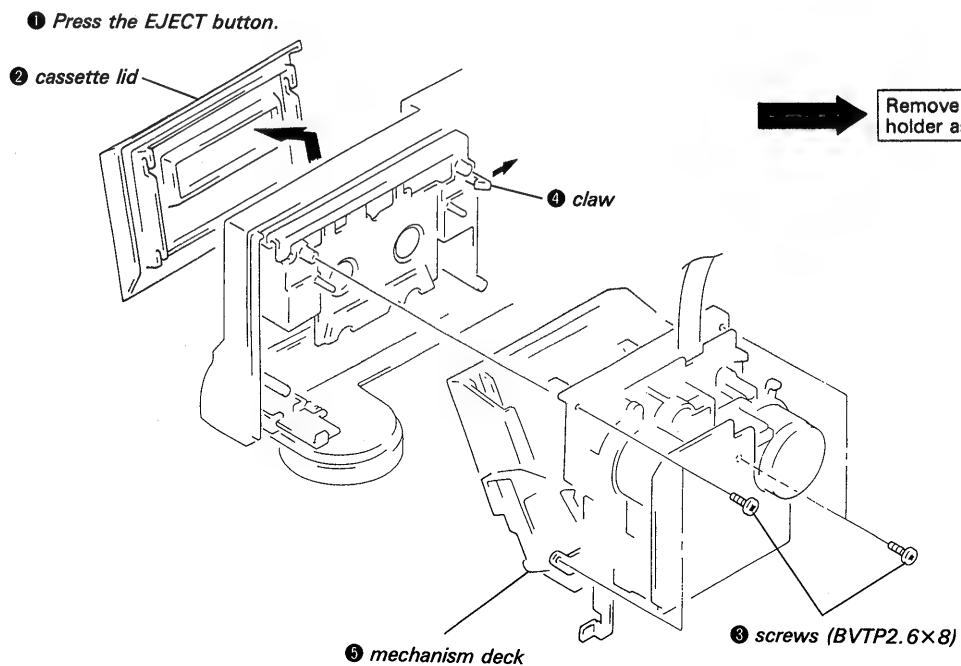
CASE

Unscrew the four case attachment screws M3×8 and remove the case.

FRONT PANEL

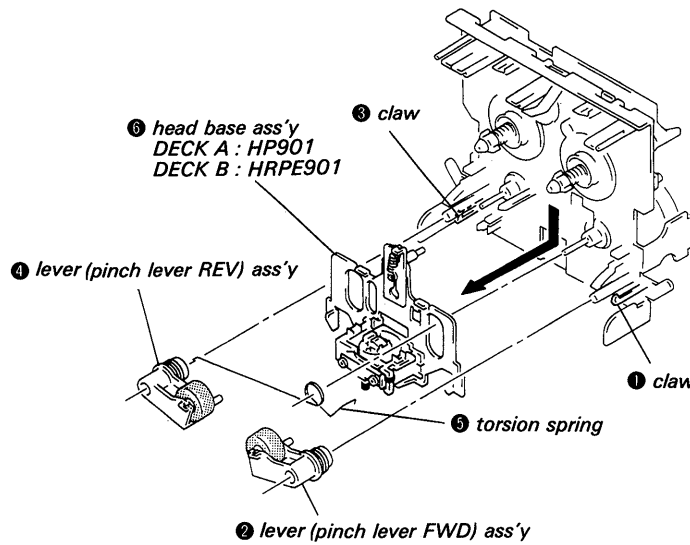


MECHANISM DECK

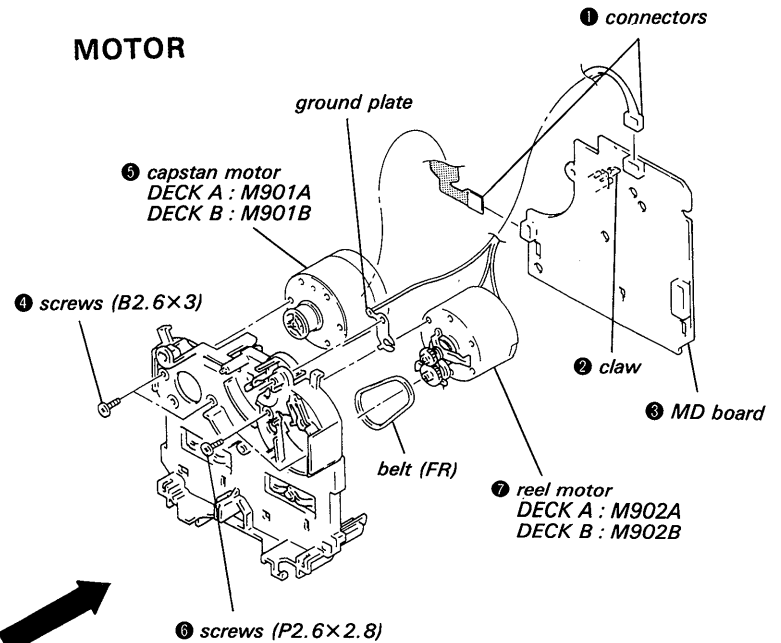


Remove the cassette holder assembly.

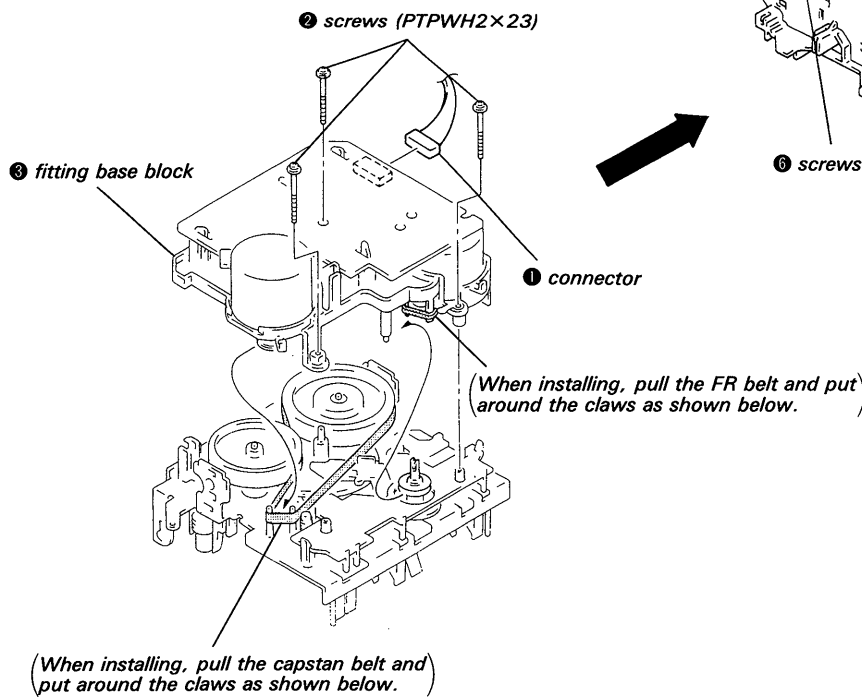
HEAD



MOTOR



FITTING BASE BLOCK



SECTION 3 ADJUSTMENTS

3-1. MECHANICAL ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured-alcoholmoistened swab;

record/playback/erase head	
pinch roller	rubber belts
capstan	idler
2. Demagnetize the record/playback head with a head demagnetizer.
(Head demagnetizer do not approach for the erase head.)
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed in the rated power supply voltage unless otherwise noted.

Torque Measurement

Torque	Torque meter	Meter reading
FWD	CQ-102C	35 to 60g · cm (0.49 to 0.83 oz · inch)
FWD Back tension	CQ-102C	2 to 6g · cm (0.03 to 0.08 oz · inch)
REV	CQ-102RC	35 to 60g · cm (0.49 to 0.83 oz · inch)
REV Back tension	CQ-102RC	2 to 6g · cm (0.03 to 0.08 oz · inch)
FF, REW	CQ-201B	70 to 110g · cm (0.98 to 1.52 oz · inch)

3-2. ELECTRICAL ADJUSTMENTS

Note: The adjustment should be performed in the order given in the service manual. As a rule, adjustment about playback should be performed before adjustment about recording. The adjustments should be performed for both L-CH and R-CH.

● Test Mode

The Test mode is activated by shorting Test Point Service mode (IC805 34 pin changes over to "L") with the POWER switch in OFF position, then turning on the POWER switch.

In this mode, the following functions operate:

1. Source monitor

Line mute is cancelled during recording.

2. High speed playback

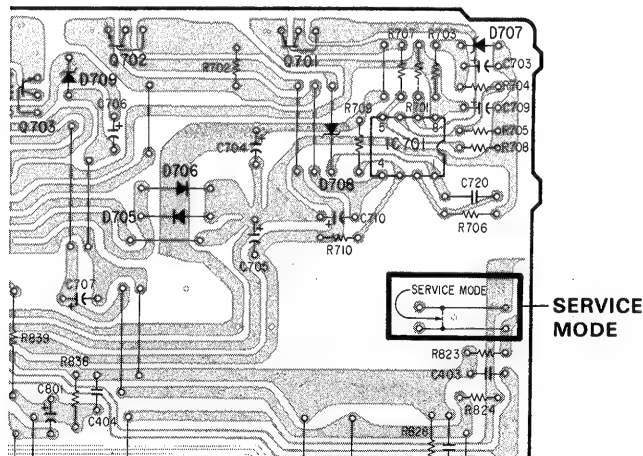
High speed playback is executed when the HIGH SPEED (DUBBING) button is pressed during playback. Normal speed playback is restored when the button is pressed again.

3. Record memory

The tape counter is reset to "0" at the record start point.

After adjustment, open the Service mode to cancel the Test mode.

[MAIN BOARD] (CONDUCTOR SIDE)



- Switches and controls should be set as follows unless otherwise specified.

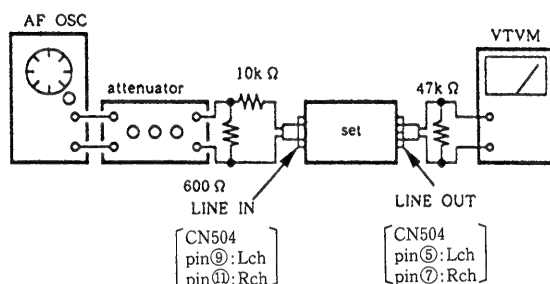
NR switch : OFF

DIR MODE switch : \rightleftarrows

- Standard Record:

Deliver the standard input signal level to the input jack and set the REC LEVEL control to obtain the standard output signal level.

— Record Mode —



Standard Input Level

input terminal	LINE IN
source impedance	10k Ω
input level	0.25V (−10dB)

Standard Output Level

output terminal	LINE OUT
load impedance	47k Ω
output level	0.44V (−5dB)

Test tape

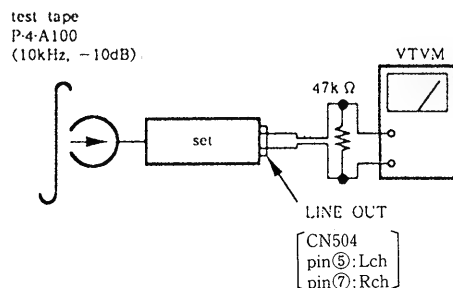
Type	Signal	Used for
P-4-A100	10kHz, −10dB	Azimuth Adjustment
P-4-L300	315Hz, 0dB	PB Level Adjustment
WS-48B	3kHz, 0dB	Tape Speed Adjustment

Record/Playback Head Azimuth Adjustment

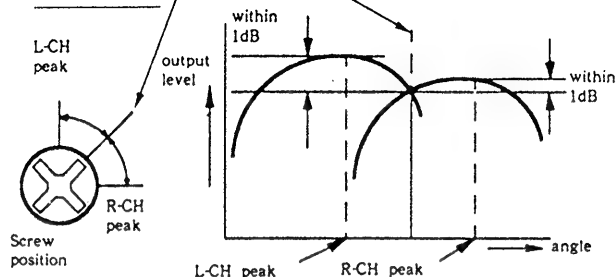
DECK A **DECK B**

Procedure :

1. Mode: FWD playback

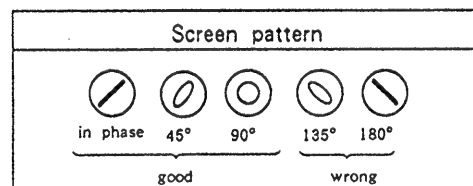
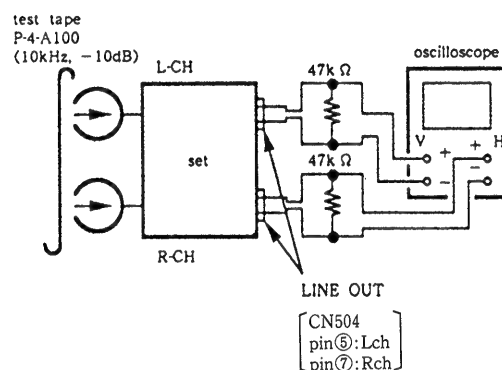


2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 1dB.



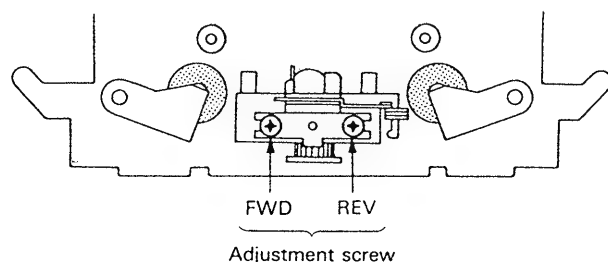
3. Phase Check

Mode: playback



4. Set in the REV mode and repeat the step 1-3.
5. After the adjustment, lock the screws with locking compound.

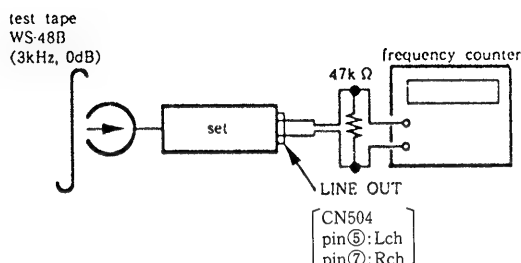
Adjustment Location : Record/playback head



Tape Speed Adjustment DECK A DECK B

Procedure :

Mode: playback



Perform high speed adjustment before normal speed adjustment.

(High speed adjustment)

1. Continue pressing the SYNCHRO DUBBING HIGH SPEED switch.
2. Check that frequency counter reading is within the standard value $6,000 \pm 60\text{Hz}$.
3. If out of the standard, adjust each RV72 so that the frequency counter reading satisfies $6,000 \pm 60\text{Hz}$ on both A and B decks.
4. Change over to Rev playback status, and repeat the above steps 1 to 3.

(Normal speed adjustment)

1. Continue pressing the SYNCHRO DUBBING NORM SPEED switch.
2. Check that the frequency counter reading is within the standard value $3,000 \pm 30\text{Hz}$.
3. If out of the standard, adjust each RV71 so that the frequency counter reading satisfies $3,000 \pm 30\text{Hz}$ on both A and B decks.
4. Change over to REV playback status, and repeat the above steps 1 to 3.

Frequency difference between the beginning and the end of the tape should be within 3%.

Frequency difference between deck A and deck B the beginning of the tape should be within 1.0%.

Adjustment Location :

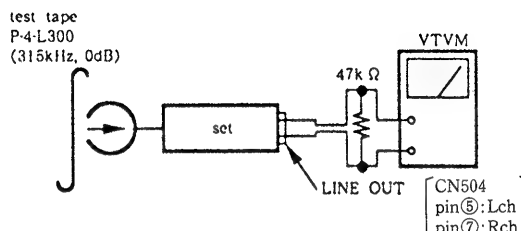
MD-A, MD-HX board

Playback Level Adjustment

DECK A DECK B

Procedure :

Mode: playback



Adjust RV11 (L-CH), RV21 (R-CH) so that the reading on VTVM meets the adjustment limits below.

Adjustment Limits :

LINE OUT level: $-5 \pm 0.5\text{dB}$ ($0.42 - 0.46\text{V}$)

Level difference between channels: less than 0.5dB
Check that the LINE OUT level does not change in playback mode while changing the mode from playback to stop several times.

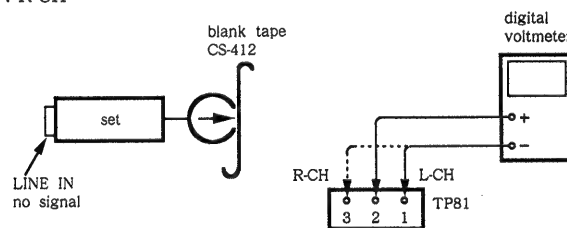
Adjustment Location : MD-A, MD-HX board

Bias Consumption Current Adjustment

This adjustment should be performed when replacing the head assy or the bias oscillating transformer (T81,T91).

Procedure :

() : R-CH



1. Connect the digital voltmeter to test point TP81.
2. Set RV81 (RV91) to mechanical center.
3. Set to FWD record mode.
4. Adjust T81 (T91) so that the digital voltmeter reading becomes minimum.

Adjustment Location : MD-HX board

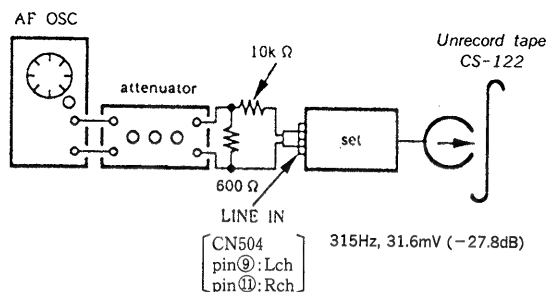
Record Bias Adjustment DECK B

Setting :

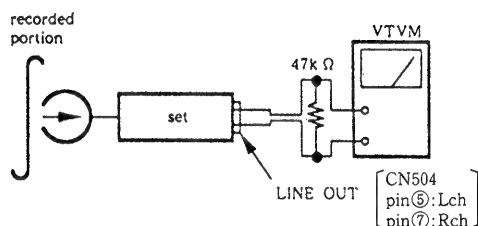
REC LEVEL control : Standard Record (See page 7).

Procedure :

1. Mode : record



2. Mode : playback



Playback the signal recorded in step 1.

Confirm that the 10kHz playback output is $0 \pm 0.5\text{dB}$ relative to the 315Hz output. If necessary, adjust RV 81 (L-CH), RV 91 (R-CH) and repeat the steps given above.

Adjustment Location : MD-HX board

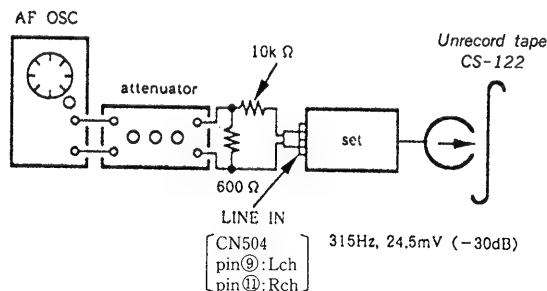
Record Level Adjustment **DECK B**

Setting :

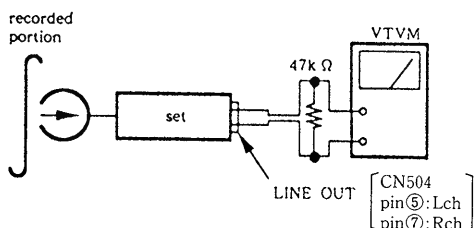
REC LEVEL control : Standard Record (See page 7).

Procedure :

1. Mode: record



2. Mode: playback



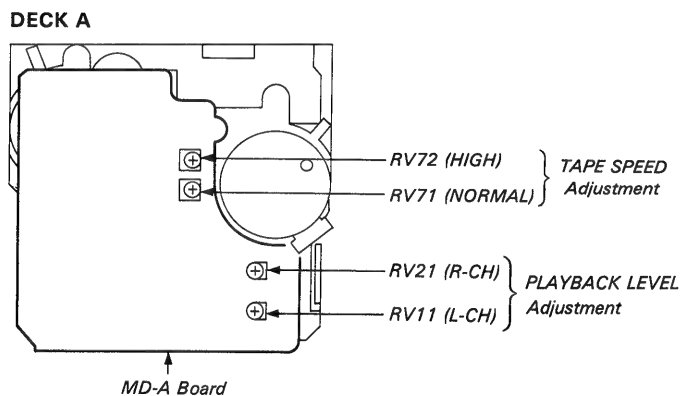
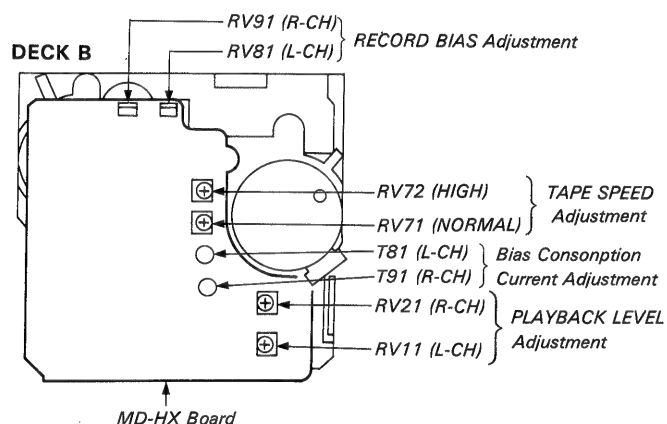
3. Playback the signal recorded in step 1.

Confirm that the signal level is within the adjustment limits below. If necessary, adjust RV101 (L-CH), RV201 (R-CH) and repeat the step 1-2.

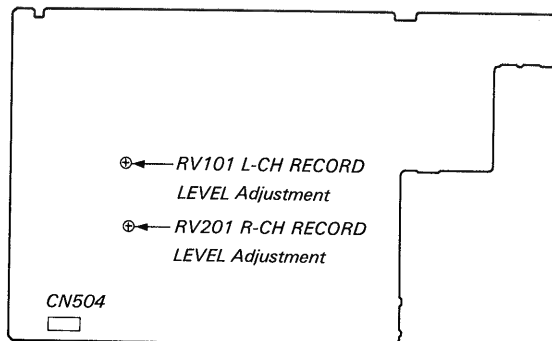
Adjustment Limits : $-27.7\text{dB} \pm 0.5\text{dB}$ (30.2—33.8mV)

Adjustment Location : MAIN board (component side)

— Adjustment Parts Location Diagrams —

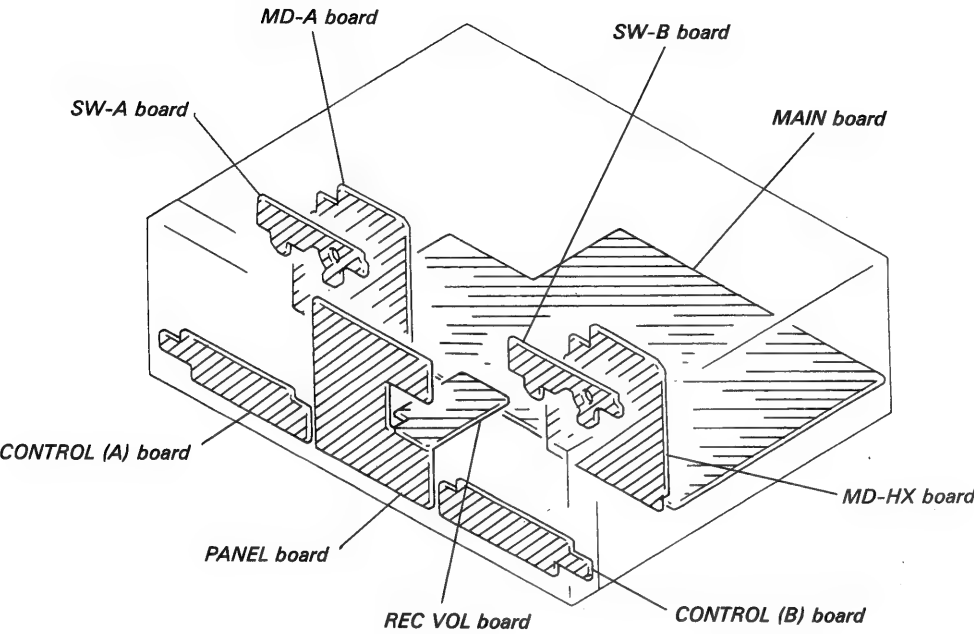


MAIN BOARD (COMPONENT SIDE)



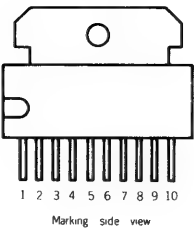
SECTION 4 DIAGRAMS

4-1. CIRCUIT BOARDS LOCATION



4-2. SEMICONDUCTOR LEAD LAYOUTS

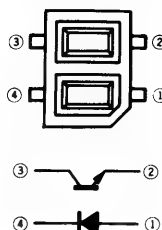
TA7272P



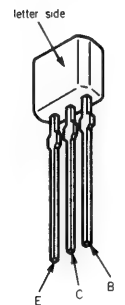
2SC2603-EF
2SC3622A-LK
DTA114ES
DTA144ES
DTC114ES
DTC143TS



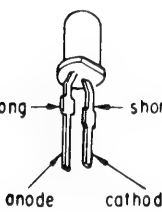
NJL5165K-B



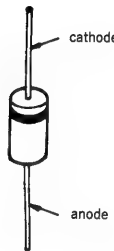
2SA1175-HFE
DTC144ES



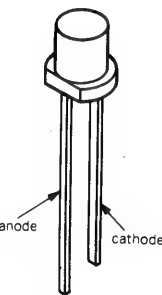
SEL2210S-C



1N4148M
10E2N



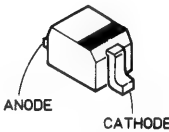
SEL2213C-C



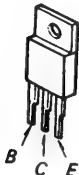
2SB1013-4



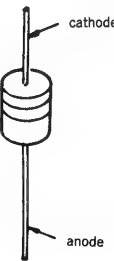
1SS352



2SB1094-LK
2SD2012



HZS6A1L
HZS9A2L
UZL-7L2



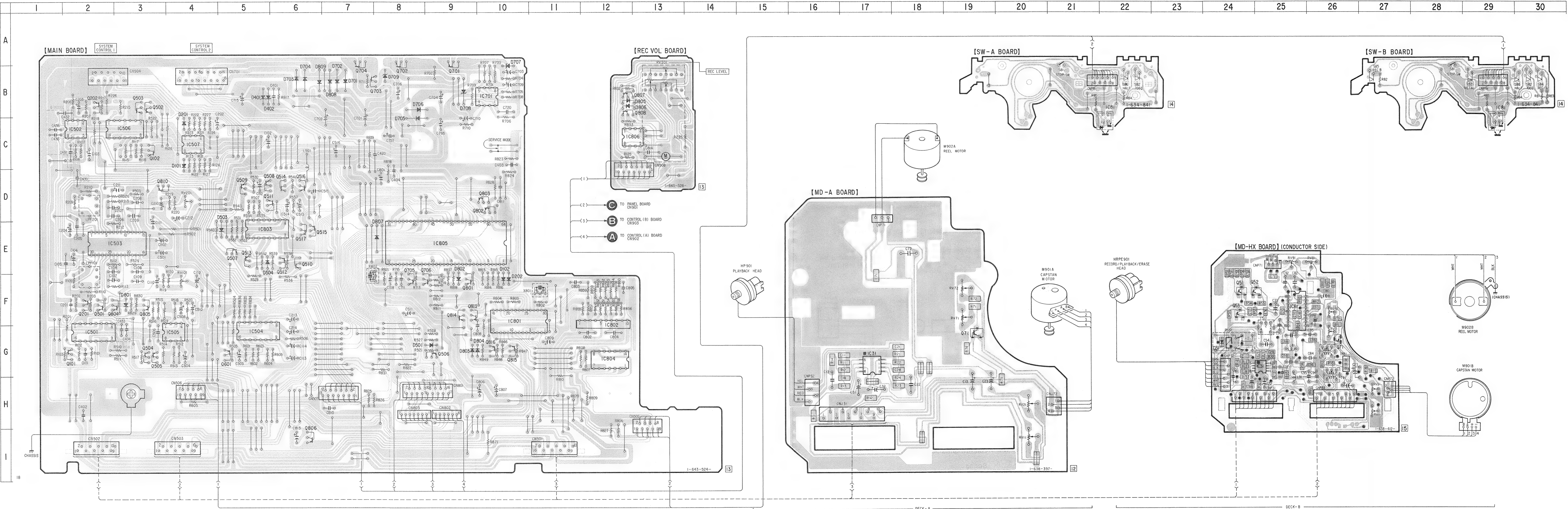
4-3. PRINTED WIRING BOARDS -MAIN Section-
• See page 10, 11 Circuit boards location and Semiconductor lead layouts.

● Semiconductor Location




Ref. No.	Location	Ref. No.	Location
D31	G-23	Q51	F-24
D101	C-4	Q52	F-25
D102	F-10	Q53	F-24
D201	C-4	Q71(MD-A)	G-19
D202	F-10	Q71(MD-HX)	G-26
D401	B-5	Q101	G-2
D402	B-5	Q102	C-3
D501	G-9	Q201	F-2
D503	E-5	Q202	B-2
D504	E-5	Q501	F-2
D701	B-7	Q502	B-3
D702	B-7	Q503	B-3
D703	B-6	Q504	G-3
D704	B-6	Q505	G-3
D705	B-8	Q506	G-9
D706	B-8	Q507	E-5
D707	B-10	Q508	D-5
D708	B-9	Q509	D-5
D709	B-8	Q510	E-6
D801	F-3	Q511	D-6
D802	F-9	Q512	E-9
D803	G-9	Q513	E-5
D804	G-10	Q514	D-6
D805	B-12	Q515	E-6
D806	B-12	Q516	D-6
D807	E-8	Q601	G-5
D808	B-7	Q701	A-9
D809	B-6	Q702	A-8
		Q703	B-8
		Q704	A-7
IC31(MD-A)	G-17	Q705	F-8
IC31(MD-HX)	G-25	Q706	F-9
IC81(SW-A)	C-22	Q801	F-9
IC81(SW-HX)	F-25	Q802	D-10
IC501	G-2	Q803	D-10
IC502	C-2	Q804	F-3
IC503	E-3	Q805	F-3
IC504	G-5	Q806	I-6
IC505	G-4	Q807	B-12
IC506	C-3	Q808	B-12
IC507	C-4	Q810	D-3
IC701	B-10	Q813	F-9
IC801	F-10	Q814	F-9
IC802	F-12	Q815	G-10
IC803	E-5	Q816	G-10
IC804	G-12		
IC805	E-9		
IC806	B-12		

Note:
○ : parts extracted from the component side.
— : parts extracted from the conductor side.
● : Through hole.
■ : Pattern on the side which is seen.
○ : Pattern of the rear side.

G:Germany

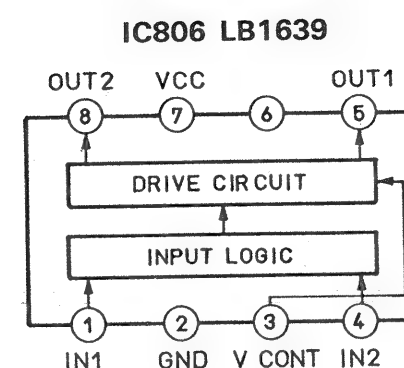
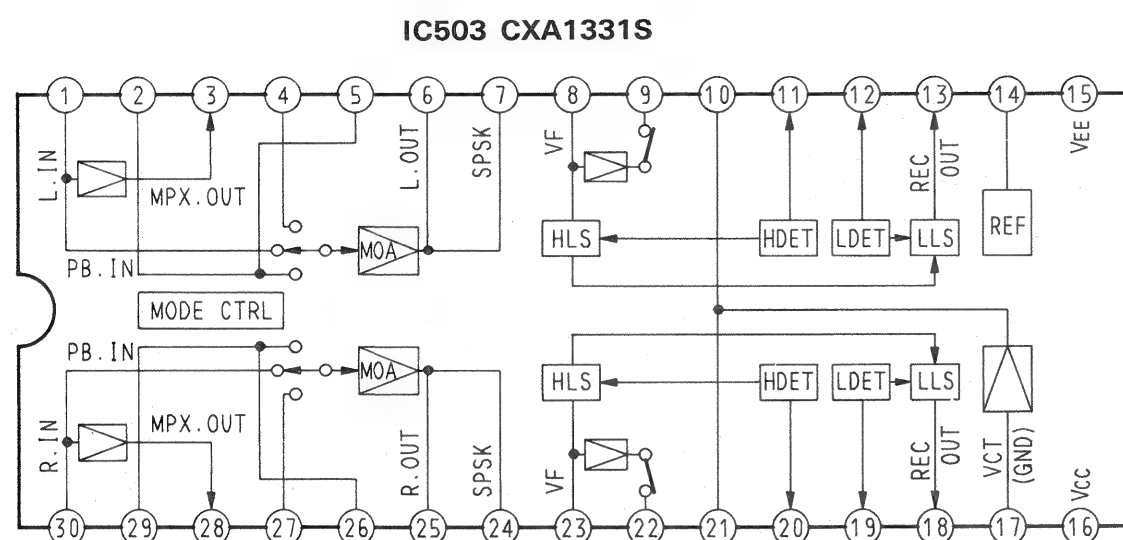
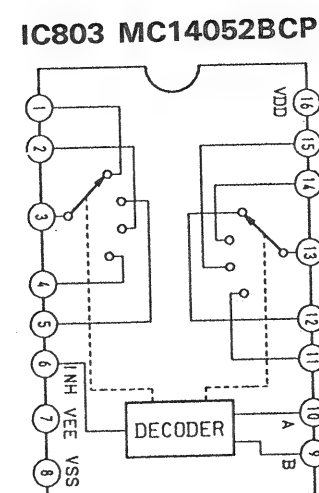
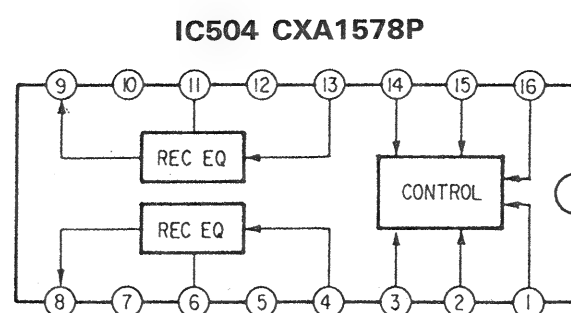
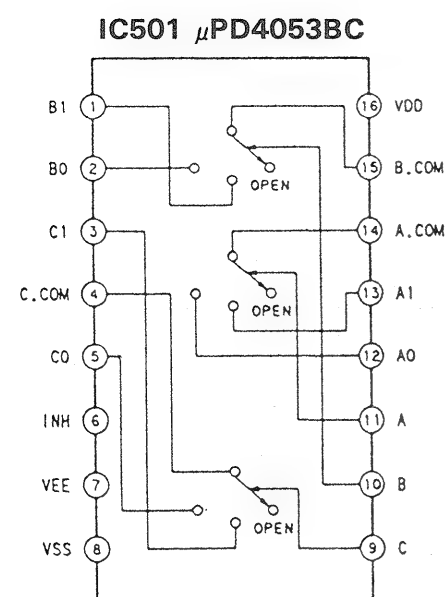


- See page 21 for IC Block Diagrams.

- o Voltage is dc with respect to ground under no-signal (detuned) conditions.
no mark: REC
- o Voltages are taken with a VOM (Input Impedance 10M Ω).
Voltage variations may be noted due to normal production tolerances.
- o Signal path.
 -  : PB (DECK A)
 -  : PB (DECK B)
 -  : REC (DECK B)
- G: Germany



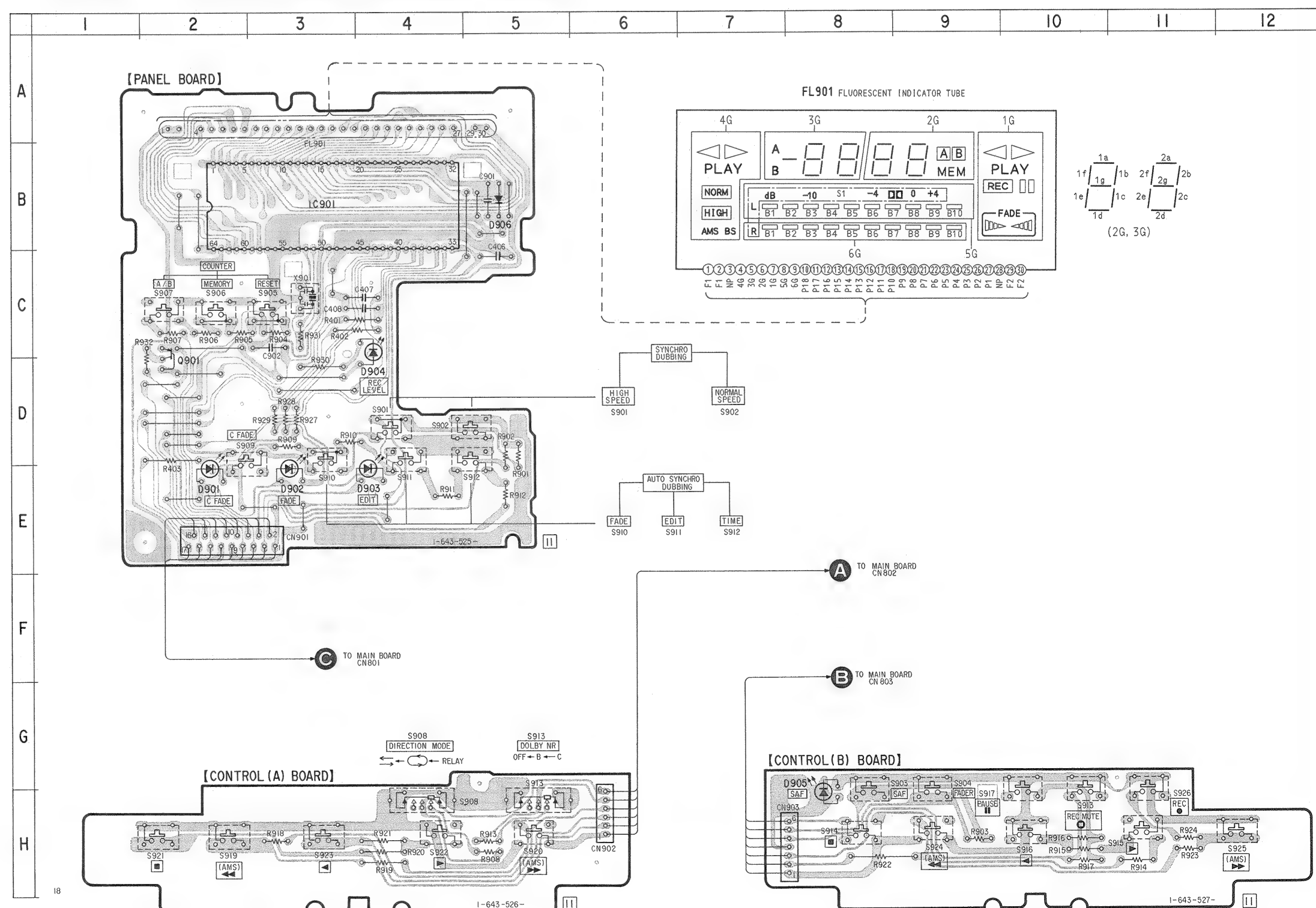
● IC Block Diagrams



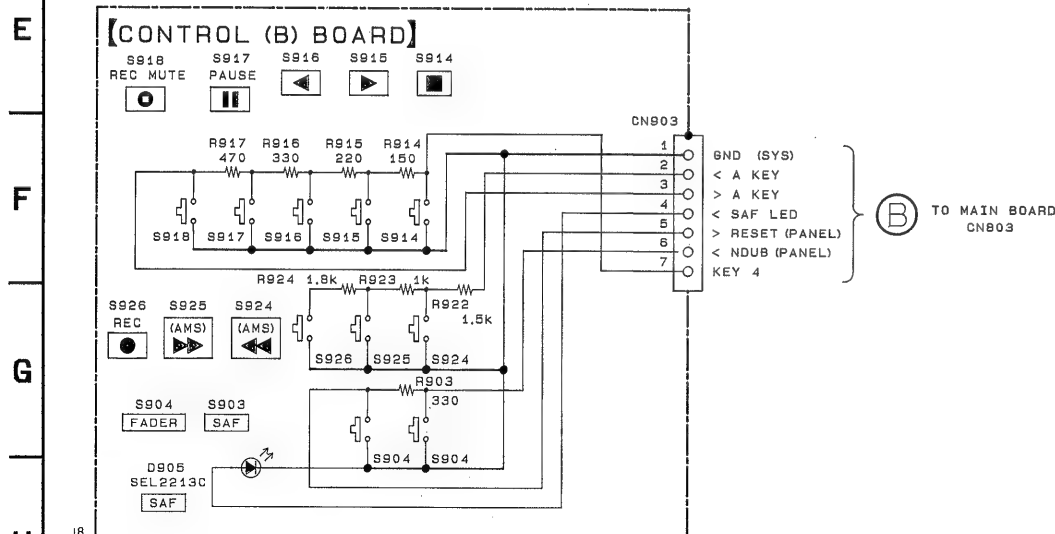
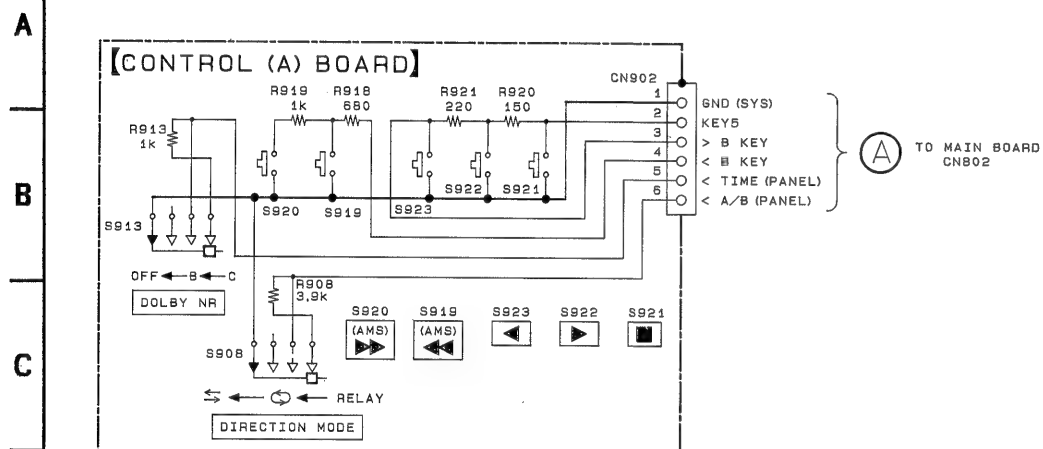
4-5. PRINTED WIRING BOARDS -PANEL Section-
 • See page 10, 11 Circuit boards location and Semiconductor lead layouts.


● Semiconductor Location

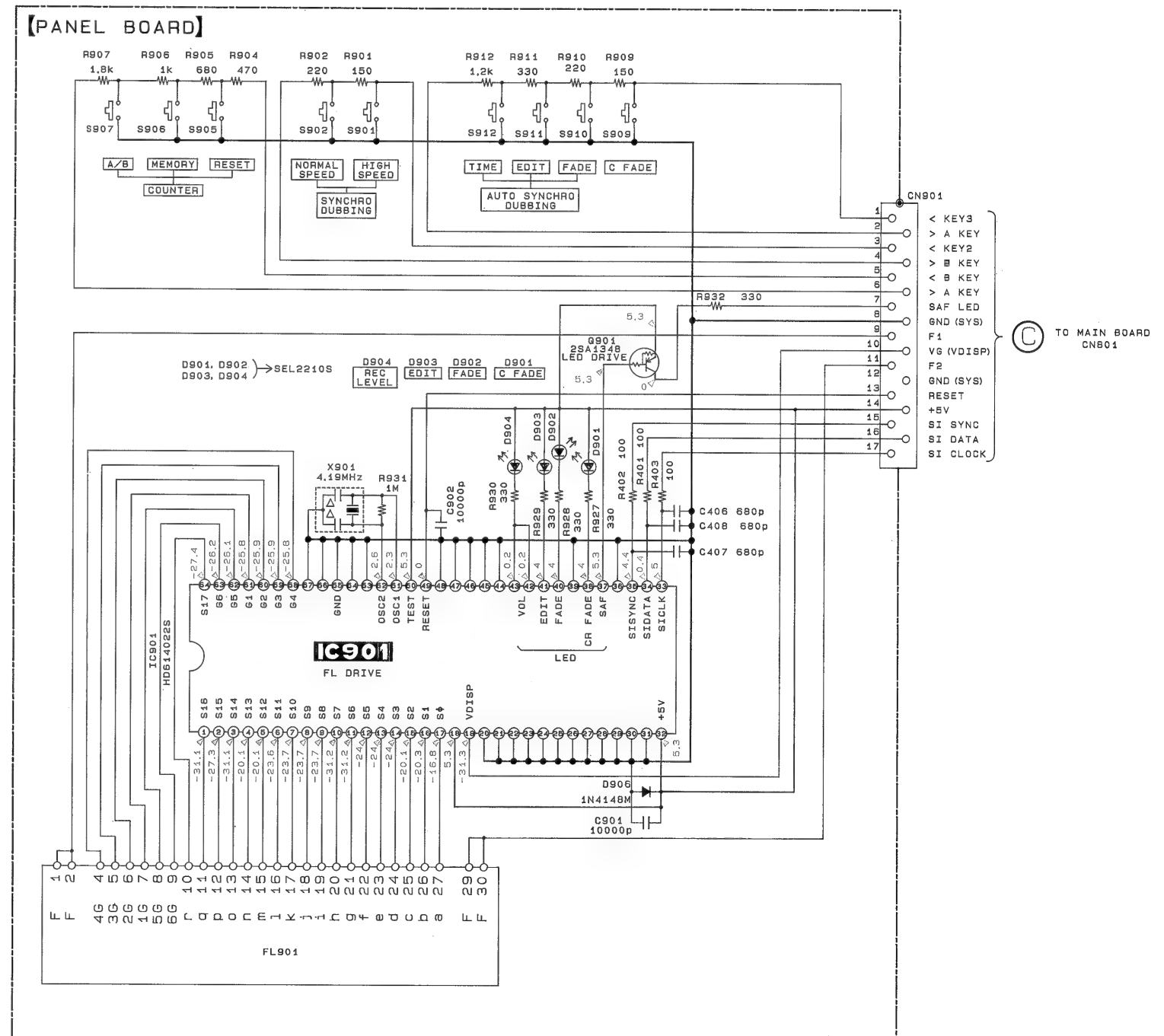
Ref. No.	Location
D901	E-2
D902	E-3
D903	E-4
D904	D-4
D905	H-8
D906	B-5
IC901	B-3
Q901	D-2



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
--	---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----



- All capacitors are in μF unless otherwise noted. $\text{pF} : \mu\text{F}$ 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}\text{W}$ or less unless otherwise specified.
- Δ : internal component.
-  : B+ Line
- Voltage is dc with respect to ground under no-signal (detuned) conditions.
no mark : REC
- Voltages are taken with a VOM (Input Impedance $10\text{M}\Omega$).
Voltage variations may be noted due to normal production tolerances.



SECTION 5 EXPLODED VIEWS

NOTE:

- -XX, -X mean standardized parts, so they may have some differences from the original one.

- Color Indication of Appearance Parts

Example:

KNOB, BALANCE(WHITE)...(RED)

↑ ↑
Parts color Cabinet's color

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- hardware (#mark) list is given in the last of this parts list.

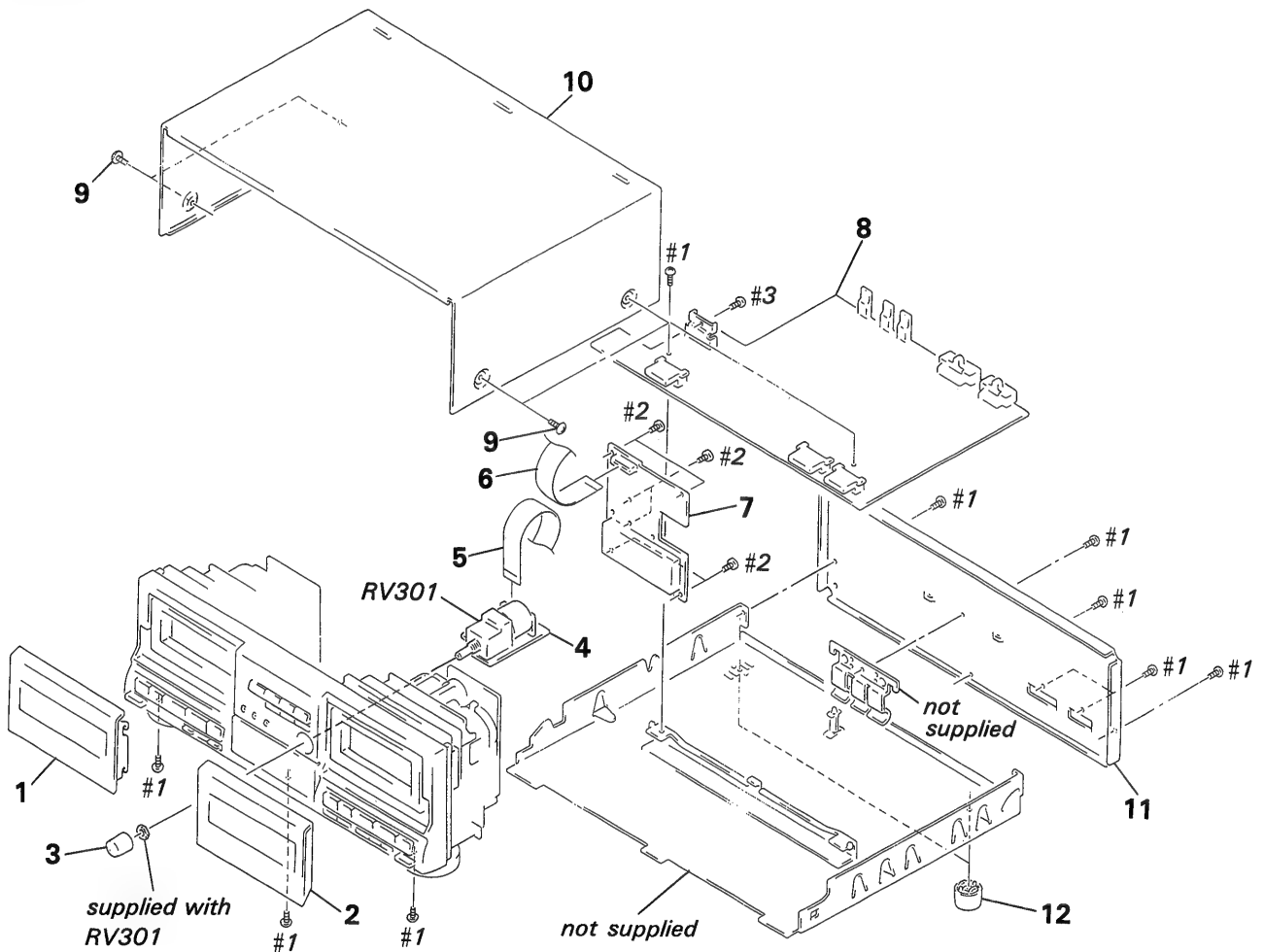
G:Germany

EA:Saudi Arabia

IT:Italian

AUS:Australian

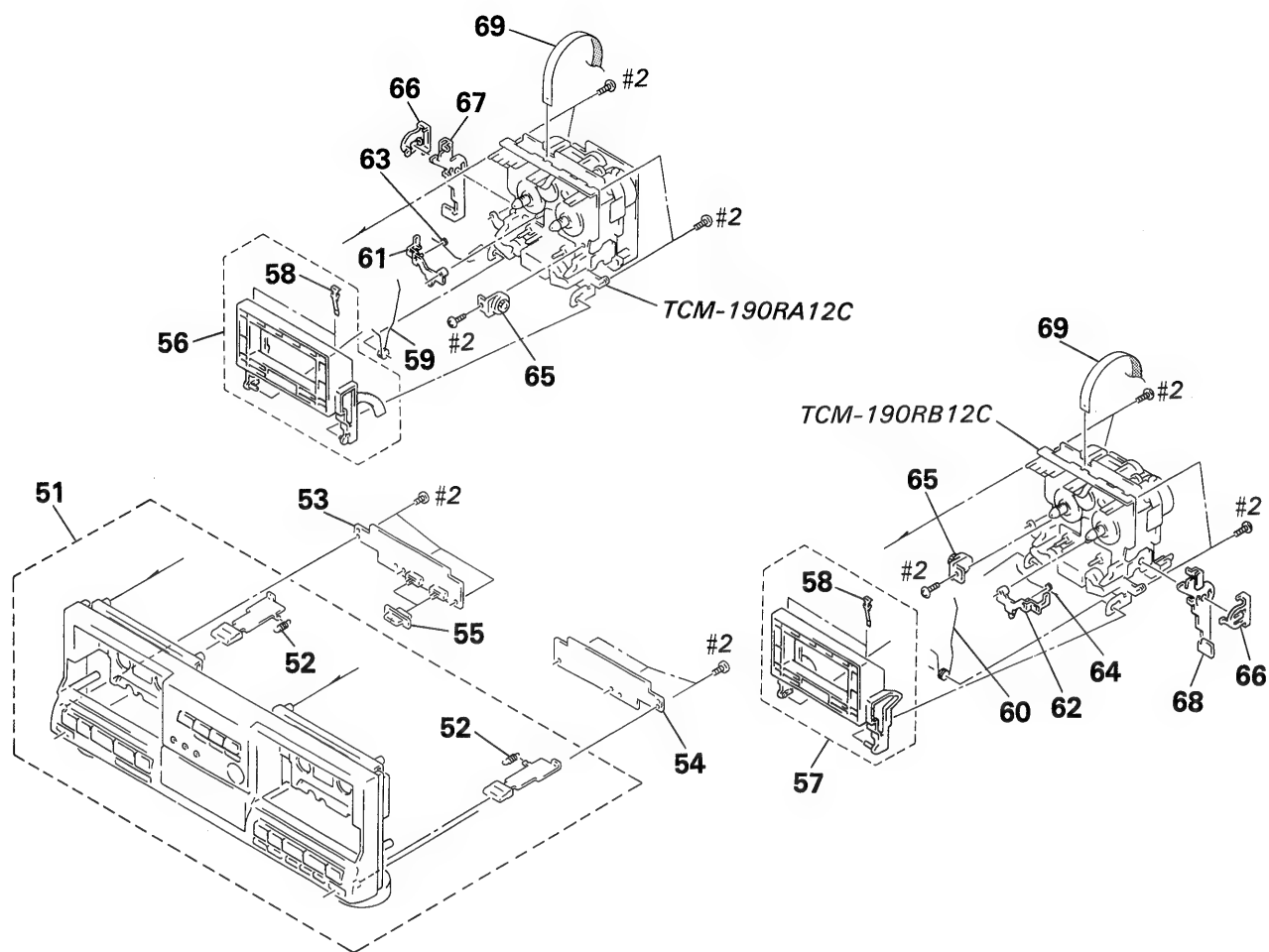
5-1. OVERALL SECTION



Ref. No.	Part No.	Description	Remark
1	X-3364-983-1	LID (A) ASSY, CASSETTE (EXCEPT IT)	
1	X-3364-984-1	LID (A) ASSY, CASSETTE (IT)	
2	X-3364-985-1	LID (B) ASSY, CASSETTE (EXCEPT IT)	
2	X-3364-986-1	LID (B) ASSY, CASSETTE (IT)	
3	4-950-651-21	KNOB (DIA. 16), ROUND (IT)	
3	4-950-651-31	KNOB (DIA. 16), ROUND (EXCEPT IT)	
* 4	1-643-528-11	REC VOL BOARD	
* 5	1-574-726-11	WIRE, FLAT TYPE (13 CORE)	
6	1-690-907-11	WIRE (FLAT TYPE) (17 CORE)	
* 7	A-2006-797-A	PANEL BOARD, COMPLETE	

Ref. No.	Part No.	Description	Remark
* 8	A-2006-796-A	MAIN BOARD, COMPLETE (EXCEPT G)	
* 8	A-2006-837-A	MAIN BOARD, COMPLETE (G)	
9	3-363-099-01	SCREW (CASE +3X8 TP2)	
* 10	4-939-803-31	CASE (EXCEPT IT)	
* 10	4-939-803-71	CASE (IT)	
* 11	3-377-136-51	PANEL, BACK (EXCEPT G)	
* 11	3-377-136-61	PANEL, BACK (G)	
12	4-931-169-01	FOOT	
RV301	1-241-891-11	RES, VAR, CARBON 20KX3 (REC LEVEL)	

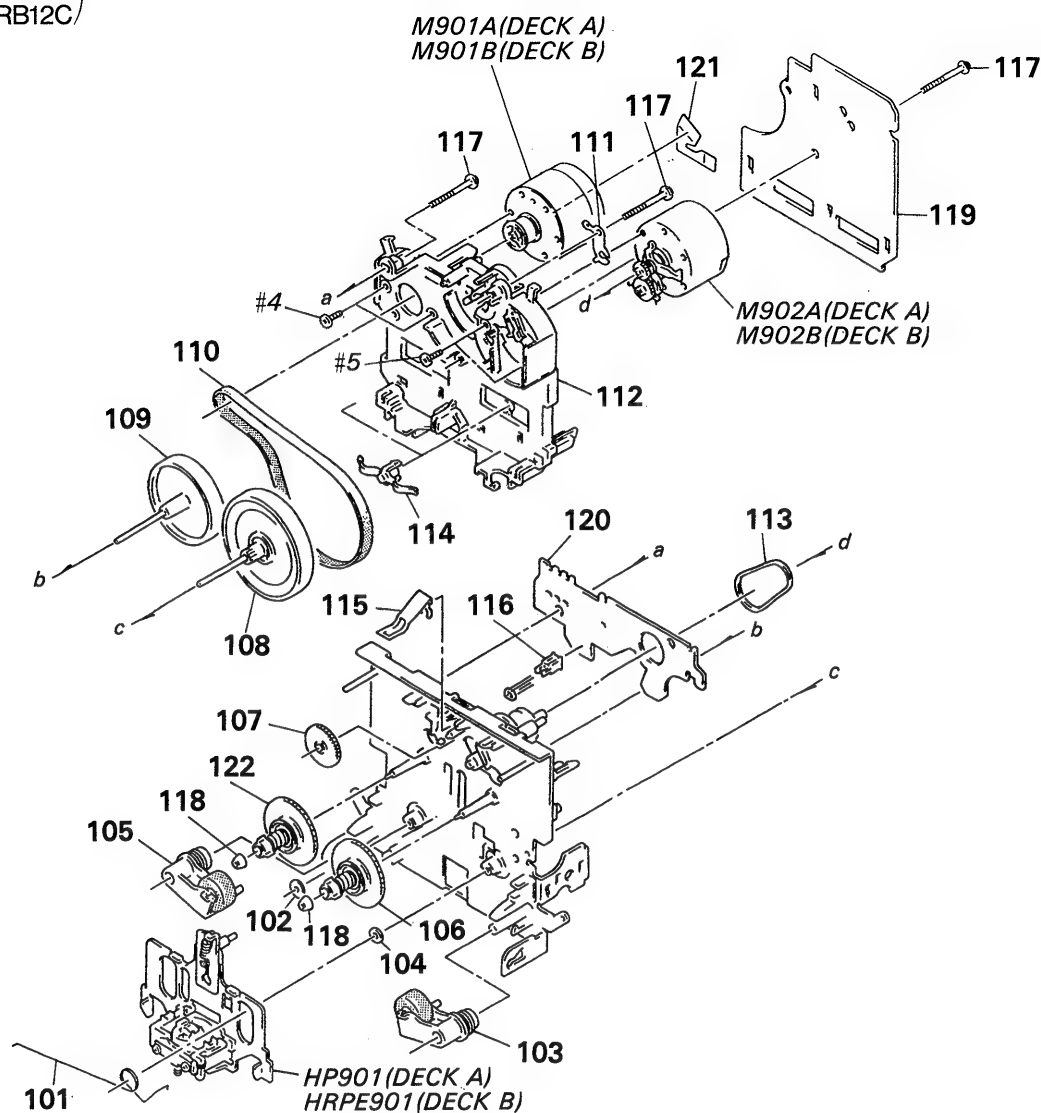
5-2. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
51	X-3364-708-1	PANEL ASSY, FRONT (EXCEPT IT)	
51	X-3364-709-1	PANEL ASSY, FRONT (IT)	
52	3-662-752-21	SPRING, TENSION	
* 53	1-643-526-11	CONTROL (A) BOARD	
* 54	1-643-527-11	CONTROL (B) BOARD	
55	3-377-120-01	KNOB (SLIDE) (EXCEPT IT)	
55	3-377-120-11	KNOB (SLIDE) (IT)	
56	X-3340-194-1	HOLDER (L) ASSY, CASSETTE	
57	X-3340-195-1	HOLDER (R) ASSY, CASSETTE	
58	3-308-823-11	SPRING	
59	3-354-959-01	SPRING (LOADING L), TORSION	

Ref. No.	Part No.	Description	Remark
60	3-354-960-01	SPRING (LOADING R), TORSION	
61	3-354-955-01	LEVER (EJ SAFTY LEVER L)	
62	3-354-956-01	LEVER (EJ SAFTY LEVER R)	
63	3-354-961-01	SPRING (EJ SAFTY SPRING L)	
64	3-354-962-01	SPRING (EJ SAFTY SPRING R)	
65	3-354-963-01	DAMPER	
66	3-354-957-01	JOINT (LOCK LEVER)	
* 67	3-363-638-01	LEVER (LOCK LEVER L)	
* 68	3-363-639-01	LEVER (LOCK LEVER R)	
69	1-690-906-11	WIRE (FLAT TYPE) (9 CORE)	

5-3. MECHANISM SECTION-1

(TCM-190RA12C)
(TCM-190RB12C)

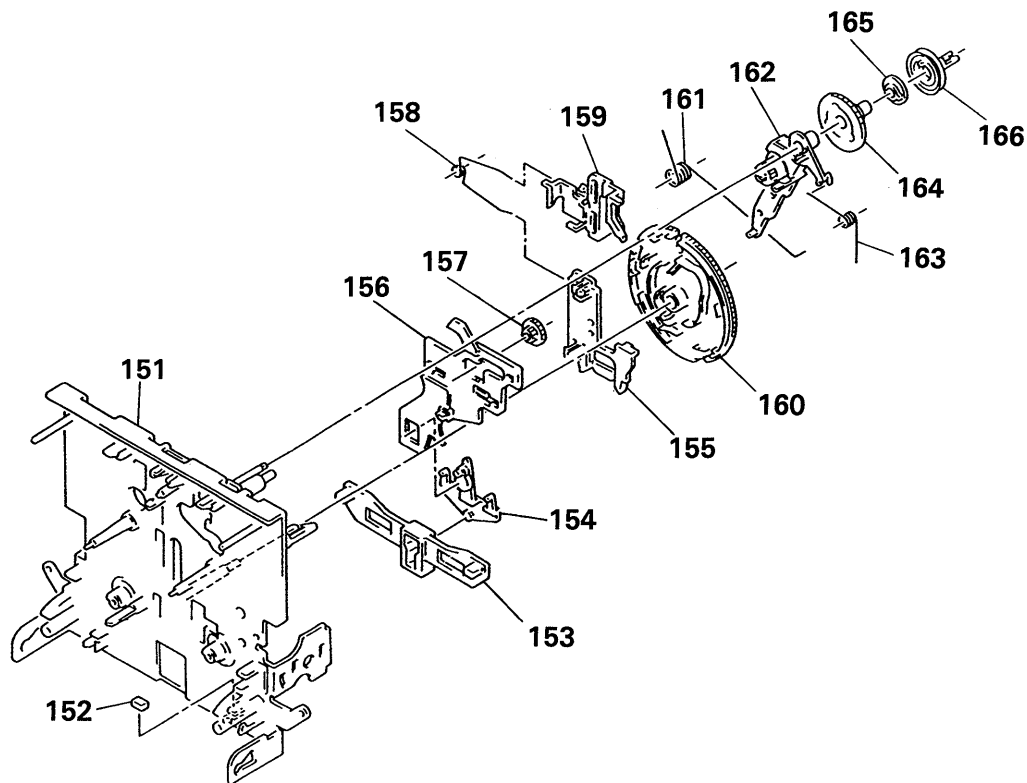
Ref. No.	Part No.	Description	Remark
101	3-359-455-01	SPRING, TORSION	
102	3-356-714-01	WASHER	
103	X-3359-408-1	LEVER (PINCH LEVER FWD) ASSY	
104	3-356-713-01	WASHER	
105	X-3359-409-1	LEVER (PINCH LEVER REV) ASSY	
106	X-3359-404-1	TABLE ASSY, REEL	
107	3-359-424-01	GEAR (REV GEAR)	
108	X-3364-554-1	FLYWHEEL (FWD) ASSY	
109	X-3359-410-1	FLYWHEEL (REV) ASSY	
110	3-359-417-01	BELT (FLAT), CAPSTAN	
111	3-359-450-01	PLATE, GROUND	
* 112	3-359-436-01	BASE (THRUST RETAINER), FITTING	
113	3-359-466-01	BELT (FR), SQUARE	
114	3-575-321-00	RETAINER, THRUST, CAPSTAN	
115	3-359-430-01	SPRING (CASSETTE RETAINER), LEAF	

Ref. No.	Part No.	Description	Remark
116	3-343-419-01	HOLDER (S SENSOR A)	
117	3-359-414-01	SCREW (+PTPH 2X23)	
118	3-362-308-01	CAP (REEL)	
* 119	A-2006-399-A	MD-A BOARD, COMPLETE (DECK A)	
* 119	A-2006-401-A	MD-HX BOARD, COMPLETE (DECK B)	
* 120	1-634-841-14	SW-A BOARD (DECK A)	
* 120	1-634-841-14	SW-B BOARD (DECK B)	
121	1-638-983-11	MOTOR FLEXIBLE BOARD	
122	X-3362-078-1	TABLE ASSY (B), REEL	
M901A	X-3359-417-1	MOTOR ASSY (CAPSTAN) (DECK A)	
M901B	X-3359-417-1	MOTOR ASSY (CAPSTAN) (DECK B)	
M902A	X-3363-501-1	MOTOR ASSY (REEL) (DECK A)	
M902B	X-3363-501-1	MOTOR ASSY (REEL) (DECK B)	
HP901	A-2003-837-A	BASE ASSY, HEAD (PB) (DECK A)	
HRPE901A	2003-838-A	BASE ASSY, HEAD (PB/REC/ERASE) (DECK B)	

5-4. MECHANISM SECTION-2

(TCM-190RA12C)

(TCM-190RB12C)



Ref. No.	Part No.	Description	Remark
151	X-3359-415-1	CHASSIS ASSY, MECHANICSL	
152	3-359-469-01	SPACER	
* 153	3-359-425-01	SLIDER (REVERSE SLIDER)	
154	3-359-426-01	LEVER (REVERSE LEVER)	
* 155	3-359-427-01	SLIDER (LEVERSE SLIDER)	
* 156	3-359-415-01	SLIDER (TRIGGER SLIDER)	
157	3-359-448-01	GEAR (TRIGGER)	
158	3-359-454-01	SPRING, TORSION	

Ref. No.	Part No.	Description	Remark
159	3-359-429-01	SLIDER (BRAKE PLATE)	
160	3-359-420-01	GEAR (CAM GEAR)	
161	3-359-456-01	SPRING (TRIGGER SPRING), TORSION	
162	X-3359-405-1	LEVER (FR ARM) ASSY	
163	3-359-453-01	SPRING (FR ARM), TORSION	
164	3-359-419-01	GEAR (FR GEAR)	
165	3-359-421-01	CLUTCH (REEL DISK)	
166	3-359-418-01	PULLEY (FR PULLEY)	

SECTION 6

ELECTRICAL PARTS LIST

CONTROL (A)**COTROL (B)****MAIN****NOTE:**

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
All resistors are in ohms.
METAL: Metal-film resistor.
METAL OXIDE: Metal oxide-film resistor.
F: nonflammable

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
In each case, u: μ , for example:
uA...: μ A.. uPA...: μ PA..
uPB...: μ PB.. uPC...: μ PC.. uPD...: μ PD..
- CAPACITORS
uF: μ F
- COILS
uH: μ H
- G: Germany

The components identified by mark Δ or dotted line with mark. Δ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description	Remark
*	1-643-526-11	CONTROL (A) BOARD *****	
		< CONNECTOR >	
*CN902	1-564-499-11	PIN, CONNECTOR 6P	
		< RESISTOR >	
R908	1-249-424-11	CARBON 3.9K 5% 1/4W	
R913	1-249-417-11	CARBON 1K 5% 1/4W	
R918	1-249-415-11	CARBON 680 5% 1/4W	
R919	1-249-417-11	CARBON 1K 5% 1/4W	
R920	1-249-407-11	CARBON 150 5% 1/4W	
R921	1-249-409-11	CARBON 220 5% 1/4W	
		< SWITCH >	
S908	1-572-378-11	SWITCH, SLIDE (DIRECTION MODE)	
S913	1-572-378-11	SWITCH, SLIDE (DOLBY NR)	
S919	1-554-303-21	SWITCH, TACTILE (AMS REW)	
S920	1-554-303-21	SWITCH, TACTILE (AMS FF)	
S921	1-554-303-21	SWITCH, TACTILE (STOP)	
S922	1-554-303-21	SWITCH, TACTILE (FWD)	
S923	1-554-303-21	SWITCH, TACTILE (REV)	

*	1-643-527-11	CONTROL (B) BOARD *****	
		< CONNECTOR >	
*CN903	1-564-500-11	PIN, CONNECTOR 7P	
		< DIODE >	
D905	8-719-302-23	LED SEL2213C-C (SAF)	

Ref. No.	Part No.	Description	Remark
		< RESISTOR >	
R903	1-249-411-11	CARBON 330 5% 1/4W	
R914	1-249-407-11	CARBON 150 5% 1/4W	
R915	1-249-409-11	CARBON 220 5% 1/4W	
R916	1-249-411-11	CARBON 330 5% 1/4W	
R917	1-249-413-11	CARBON 470 5% 1/4W	
R922	1-249-419-11	CARBON 1.5K 5% 1/4W	
R923	1-249-417-11	CARBON 1K 5% 1/4W	
R924	1-249-420-11	CARBON 1.8K 5% 1/4W	
		< SWITCH >	
S903	1-554-303-21	SWITCH, TACTILE (SAF)	
S904	1-554-303-21	SWITCH, TACTILE (FADER)	
S914	1-554-303-21	SWITCH, TACTILE (STOP)	
S915	1-554-303-21	SWITCH, TACTILE (FWD)	
S916	1-554-303-21	SWITCH, TACTILE (REV)	
S917	1-554-303-21	SWITCH, TACTILE (PAUSE)	
S918	1-554-303-21	SWITCH, TACTILE (REC MUTE)	
S924	1-554-303-21	SWITCH, TACTILE (AMS REW)	
S925	1-554-303-21	SWITCH, TACTILE (AMS FF)	
S926	1-554-303-21	SWITCH, TACTILE (REC)	

*	A-2006-796-A	MAIN BOARD, COMPLETE (EXCEPT G)	
*	A-2006-837-A	MAIN BOARD, COMPLETE (G) *****	
		< CAPACITOR >	
C101	1-136-157-00	FILM 0.022uF 5% 50V	
C102	1-126-161-11	ELECT 2.2uF 20% 50V	
C103	1-126-059-11	ELECT 10uF 20% 50V	
C104	1-126-301-11	ELECT 1uF 20% 50V	

MAIN

Ref. No.	Part No.	Description	Remark		
C105	1-162-294-31	CERAMIC	0.001uF	10%	50V
C106	1-130-475-00	MYLAR	0.0022uF	5%	50V
C107	1-130-475-00	MYLAR	0.0022uF	5%	50V
C108	1-136-174-00	FILM	0.56uF	5%	50V
C109	1-136-171-00	FILM	0.33uF	5%	50V
C110	1-126-059-11	ELECT	10uF	20%	50V
C111	1-126-059-11	ELECT	10uF	20%	50V
C112	1-126-162-11	ELECT	3.3uF	20%	50V
C113	1-126-300-11	ELECT	0.47uF	20%	50V
C114	1-126-059-11	ELECT	10uF	20%	50V
C201	1-136-157-00	FILM	0.022uF	5%	50V
C202	1-126-161-11	ELECT	2.2uF	20%	50V
C203	1-126-059-11	ELECT	10uF	20%	50V
C204	1-126-301-11	ELECT	1uF	20%	50V
C205	1-162-294-31	CERAMIC	0.001uF	10%	50V
C206	1-130-475-00	MYLAR	0.0022uF	5%	50V
C207	1-130-475-00	MYLAR	0.0022uF	5%	50V
C208	1-136-174-00	FILM	0.56uF	5%	50V
C209	1-136-171-00	FILM	0.33uF	5%	50V
C210	1-126-059-11	ELECT	10uF	20%	50V
C211	1-126-059-11	ELECT	10uF	20%	50V
C212	1-126-162-11	ELECT	3.3uF	20%	50V
C213	1-126-300-11	ELECT	0.47uF	20%	50V
C214	1-126-059-11	ELECT	10uF	20%	50V
C401	1-164-159-11	CERAMIC	0.1uF		50V
C402	1-101-005-00	CERAMIC	22000PF		50V
C403	1-101-005-00	CERAMIC	22000PF		50V
C404	1-101-005-00	CERAMIC	22000PF		50V
C420	1-164-159-11	CERAMIC	0.1uF		50V
C430	1-164-159-11	CERAMIC	0.1uF		50V (G)
C431	1-162-286-31	CERAMIC	220PF	10%	50V (G)
C432	1-162-286-31	CERAMIC	220PF	10%	50V (G)
C433	1-164-159-11	CERAMIC	0.1uF		50V (G)
C434	1-164-159-11	CERAMIC	0.1uF		50V (G)
C435	1-164-159-11	CERAMIC	0.1uF		50V (G)
C436	1-164-159-11	CERAMIC	0.1uF		50V (G)
C501	1-124-994-11	ELECT	100uF	20%	10V
C502	1-124-994-11	ELECT	100uF	20%	10V
C503	1-126-059-11	ELECT	10uF	20%	50V
C504	1-126-161-11	ELECT	2.2uF	20%	50V
C506	1-161-494-00	CERAMIC	0.022uF		25V
C508	1-126-163-11	ELECT	4.7uF	20%	50V
C510	1-126-161-11	ELECT	2.2uF	20%	50V
C511	1-126-161-11	ELECT	2.2uF	20%	50V
C512	1-124-910-11	ELECT	47uF	20%	50V
C513	1-126-161-11	ELECT	2.2uF	20%	50V
C514	1-124-910-11	ELECT	47uF	20%	50V
C515	1-124-478-11	ELECT	100uF	20%	25V
C516	1-124-478-11	ELECT	100uF	20%	25V

Ref. No.	Part No.	Description	Remark		
C701	1-126-937-11	ELECT	4700uF	20%	16V
C702	1-126-937-11	ELECT	4700uF	20%	16V
C703	1-126-101-11	ELECT	100uF	20%	16V
C704	1-124-473-11	ELECT	1000uF	20%	10V
C705	1-124-473-11	ELECT	1000uF	20%	10V
C706	1-126-161-11	ELECT	2.2uF	20%	50V
C707	1-124-472-11	ELECT	470uF	20%	10V
C708	1-126-301-11	ELECT	1uF	20%	50V
C709	1-126-301-11	ELECT	1uF	20%	50V
C710	1-126-301-11	ELECT	1uF	20%	50V
C711	1-101-005-00	CERAMIC	22000PF		50V
C712	1-126-867-11	ELECT	33uF	20%	50V
C720	1-162-215-31	CERAMIC	47PF	5%	50V
C801	1-126-162-11	ELECT	3.3uF	20%	50V
C802	1-162-288-31	CERAMIC	330PF	10%	50V
C803	1-136-165-00	FILM	0.1uF	5%	50V
C804	1-162-288-31	CERAMIC	330PF	10%	50V
C805	1-136-165-00	FILM	0.1uF	5%	50V
C806	1-124-994-11	ELECT	100uF	20%	10V
C807	1-124-994-11	ELECT	100uF	20%	10V
C808	1-101-005-00	CERAMIC	22000PF		50V
C809	1-124-994-11	ELECT	100uF	20%	10V
C810	1-136-165-00	FILM	0.1uF	5%	50V
C811	1-161-379-00	CERAMIC	0.01uF	20%	25V (EXCEPT G)
C811	1-164-159-11	CERAMIC	0.1uF		50V (G)
C813	1-126-161-11	ELECT	2.2uF	20%	50V
< CONNECTOR >					
*CN501	1-580-784-11	CONNECTOR, BOARD TO BOARD			
*CN502	1-580-784-11	CONNECTOR, BOARD TO BOARD			
*CN503	1-580-784-11	CONNECTOR, BOARD TO BOARD			
*CN504	1-566-858-41	SOCKET, CONNECTOR 11P			
*CN505	1-568-828-11	SOCKET, CONNECTOR 9P			
*CN506	1-568-828-11	SOCKET, CONNECTOR 9P			
*CN507	1-568-832-11	SOCKET, CONNECTOR 13P			
*CN701	1-566-859-11	SOCKET, CONNECTOR 15P			
*CN801	1-568-836-11	SOCKET, CONNECTOR 17P			
*CN802	1-564-340-61	PIN, CONNECTOR 6P			
*CN803	1-564-341-11	PIN, CONNECTOR 7P			
< DIODE >					
D101	8-719-987-63	DIODE	1N4148M		
D102	8-719-987-63	DIODE	1N4148M		
D201	8-719-987-63	DIODE	1N4148M		
D202	8-719-987-63	DIODE	1N4148M		
D401	8-719-933-54	DIODE	HZS9A2L		
D402	8-719-933-54	DIODE	HZS9A2L		

MAIN

Ref. No.	Part No.	Description	Remark
D501	8-719-987-63	DIODE 1N4148M	
D503	8-719-987-63	DIODE 1N4148M	
D504	8-719-987-63	DIODE 1N4148M	
D701	8-719-200-77	DIODE 10E2N	
D702	8-719-200-77	DIODE 10E2N	
D703	8-719-200-77	DIODE 10E2N	
D704	8-719-200-77	DIODE 10E2N	
D705	8-719-200-77	DIODE 10E2N	
D706	8-719-200-77	DIODE 10E2N	
D707	8-719-933-33	DIODE HZS6A1L	
D708	8-719-933-33	DIODE HZS6A1L	
D709	8-719-000-78	DIODE UZL-7L2	
D801	8-719-933-54	DIODE HZS9A2L	
D802	8-719-987-63	DIODE 1N4148M	
D803	8-719-987-63	DIODE 1N4148M	
D804	8-719-987-63	DIODE 1N4148M	
D807	8-719-987-63	DIODE 1N4148M	
D808	8-719-987-63	DIODE 1N4148M	
D809	8-719-987-63	DIODE 1N4148M	
< IC >			
IC501	8-759-140-53	IC uPD4053BC	
IC502	8-759-634-51	IC M5218AP	
IC503	8-752-059-55	IC CXA1331S	
IC504	8-752-055-61	IC CXA1578P	
IC505	8-759-945-58	IC RC4558P	
IC506	8-759-000-49	IC MC14066BCP	
IC507	8-759-945-58	IC RC4558P	
IC701	8-759-945-58	IC RC4558P	
IC801	8-759-635-94	IC M50925SP-482SP	
IC802	8-759-207-05	IC TA7272P	
IC803	8-759-000-48	IC MC14052BCP	
IC804	8-759-240-71	IC TC4071BP	
IC805	8-759-067-45	IC M50944-180SP	
< COIL >			
L501	1-408-080-00	INDUCTOR 100uH	
< FILTER >			
LPF101	1-236-087-11	FILTER, LOW PASS	
LPF201	1-236-087-11	FILTER, LOW PASS	
< TRANSISTOR >			
Q101	8-729-900-74	TRANSISTOR DTC143TS	
Q102	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q201	8-729-900-74	TRANSISTOR DTC143TS	
Q202	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q501	8-729-900-61	TRANSISTOR DTA114ES	

Ref. No.	Part No.	Description	Remark
Q502	8-729-900-61	TRANSISTOR DTA114ES	
Q503	8-729-900-80	TRANSISTOR DTC114ES	
Q504	8-729-900-80	TRANSISTOR DTC114ES	
Q505	8-729-900-61	TRANSISTOR DTA114ES	
Q506	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q507	8-729-900-89	TRANSISTOR DTC144ES	
Q508	8-729-900-80	TRANSISTOR DTC114ES	
Q509	8-729-900-74	TRANSISTOR DTC143TS	
Q510	8-729-141-26	TRANSISTOR 2SC3622A-LK	
Q511	8-729-900-80	TRANSISTOR DTC114ES	
Q512	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q513	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q514	8-729-900-74	TRANSISTOR DTC143TS	
Q515	8-729-900-61	TRANSISTOR DTA114ES	
Q516	8-729-900-80	TRANSISTOR DTC114ES	
Q517	8-729-900-61	TRANSISTOR DTA114ES	
Q601	8-729-900-65	TRANSISTOR DTA144ES	
Q701	8-729-141-83	TRANSISTOR 2SB1094-LK	
Q702	8-729-209-15	TRANSISTOR 2SD2012	
Q703	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q704	8-729-209-15	TRANSISTOR 2SD2012	
Q705	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q706	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q801	8-729-900-80	TRANSISTOR DTC114ES	
Q802	8-729-900-61	TRANSISTOR DTA114ES	
Q803	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q804	8-729-900-89	TRANSISTOR DTC144ES	
Q805	8-729-900-65	TRANSISTOR DTA144ES	
Q806	8-729-900-61	TRANSISTOR DTA114ES	
Q810	8-729-900-61	TRANSISTOR DTA114ES	
Q813	8-729-900-61	TRANSISTOR DTA114ES	
Q814	8-729-900-89	TRANSISTOR DTC144ES	
Q815	8-729-801-84	TRANSISTOR 2SB1013-4	
Q816	8-729-801-84	TRANSISTOR 2SB1013-4	
< RESISTOR >			
R101	1-249-421-11	CARBON 2.2K 5% 1/4W	
R102	1-249-423-11	CARBON 3.3K 5% 1/4W	
R103	1-247-887-00	CARBON 220K 5% 1/4W	
R106	1-249-421-11	CARBON 2.2K 5% 1/4W	
R107	1-249-437-11	CARBON 47K 5% 1/4W	
R109	1-249-423-11	CARBON 3.3K 5% 1/4W	
R110	1-249-428-11	CARBON 8.2K 5% 1/4W	
R112	1-247-864-11	CARBON 24K 5% 1/4W	
R113	1-249-414-11	CARBON 560 5% 1/4W	
R115	1-249-421-11	CARBON 2.2K 5% 1/4W	
R117	1-249-431-11	CARBON 15K 5% 1/4W	
R118	1-249-421-11	CARBON 2.2K 5% 1/4W	
R119	1-249-429-11	CARBON 10K 5% 1/4W	

MAIN

Ref. No.	Part No.	Description	Remark		
R120	1-249-421-11	CARBON	2. 2K	5%	1/4W
R121	1-249-417-11	CARBON	1K	5%	1/4W
R122	1-249-432-11	CARBON	18K	5%	1/4W
R123	1-249-432-11	CARBON	18K	5%	1/4W
R124	1-249-410-11	CARBON	270	5%	1/4W
R126	1-249-417-11	CARBON	1K	5%	1/4W
R127	1-249-429-11	CARBON	10K	5%	1/4W
R201	1-249-421-11	CARBON	2. 2K	5%	1/4W
R202	1-249-423-11	CARBON	3. 3K	5%	1/4W
R203	1-247-887-00	CARBON	220K	5%	1/4W
R206	1-249-421-11	CARBON	2. 2K	5%	1/4W
R207	1-249-437-11	CARBON	47K	5%	1/4W
R209	1-249-423-11	CARBON	3. 3K	5%	1/4W
R210	1-249-428-11	CARBON	8. 2K	5%	1/4W
R212	1-247-864-11	CARBON	24K	5%	1/4W
R213	1-249-414-11	CARBON	560	5%	1/4W
R215	1-249-421-11	CARBON	2. 2K	5%	1/4W
R217	1-249-431-11	CARBON	15K	5%	1/4W
R218	1-249-421-11	CARBON	2. 2K	5%	1/4W
R219	1-249-429-11	CARBON	10K	5%	1/4W
R220	1-249-421-11	CARBON	2. 2K	5%	1/4W
R221	1-249-417-11	CARBON	1K	5%	1/4W
R222	1-249-432-11	CARBON	18K	5%	1/4W
R223	1-249-432-11	CARBON	18K	5%	1/4W
R224	1-249-410-11	CARBON	270	5%	1/4W
R226	1-249-417-11	CARBON	1K	5%	1/4W
R227	1-249-429-11	CARBON	10K	5%	1/4W
R501	1-249-405-11	CARBON	100	5%	1/4W
R502	1-249-405-11	CARBON	100	5%	1/4W
R503	1-249-434-11	CARBON	27K	5%	1/4W
R504	1-249-429-11	CARBON	10K	5%	1/4W
R505	1-249-413-11	CARBON	470	5%	1/4W
R506	1-247-864-11	CARBON	24K	5%	1/4W
R507	1-247-887-00	CARBON	220K	5%	1/4W
R510	1-249-429-11	CARBON	10K	5%	1/4W
R511	1-249-429-11	CARBON	10K	5%	1/4W
R512	1-247-887-00	CARBON	220K	5%	1/4W
R513	1-249-429-11	CARBON	10K	5%	1/4W
R514	1-249-441-11	CARBON	100K	5%	1/4W
R515	1-249-428-11	CARBON	8. 2K	5%	1/4W
R516	1-249-423-11	CARBON	3. 3K	5%	1/4W
R517	1-249-441-11	CARBON	100K	5%	1/4W
R518	1-249-417-11	CARBON	1K	5%	1/4W
R519	1-249-441-11	CARBON	100K	5%	1/4W
R520	1-249-429-11	CARBON	10K	5%	1/4W
R521	1-249-441-11	CARBON	100K	5%	1/4W
R522	1-249-433-11	CARBON	22K	5%	1/4W
R524	1-249-417-11	CARBON	1K	5%	1/4W
R526	1-249-429-11	CARBON	10K	5%	1/4W

Ref. No.	Part No.	Description	Remark		
R527	1-249-417-11	CARBON	1K	5%	1/4W
R528	1-249-437-11	CARBON	47K	5%	1/4W
R529	1-249-425-11	CARBON	4. 7K	5%	1/4W
R530	1-249-407-11	CARBON	150	5%	1/4W
R531	1-249-431-11	CARBON	15K	5%	1/4W
R532	1-247-842-11	CARBON	3K	5%	1/4W
R533	1-249-438-11	CARBON	56K	5%	1/4W
R534	1-247-882-11	CARBON	130K	5%	1/4W
R535	1-249-440-11	CARBON	82K	5%	1/4W
R536	1-249-405-11	CARBON	100	5%	1/4W
R537	1-249-433-11	CARBON	22K	5%	1/4W
R538	1-249-425-11	CARBON	4. 7K	5%	1/4W
R539	1-249-414-11	CARBON	560	5%	1/4W
R540	1-249-433-11	CARBON	22K	5%	1/4W
R541	1-249-407-11	CARBON	150	5%	1/4W
R542	1-249-425-11	CARBON	4. 7K	5%	1/4W
R543	1-249-433-11	CARBON	22K	5%	1/4W
R601	1-249-427-11	CARBON	6. 8K	5%	1/4W
R602	1-249-425-11	CARBON	4. 7K	5%	1/4W
R603	1-249-417-11	CARBON	1K	5%	1/4W
R604	1-247-862-11	CARBON	20K	5%	1/4W
R605	1-249-429-11	CARBON	10K	5%	1/4W
R701	1-249-413-11	CARBON	470	5%	1/4W
R702	1-249-413-11	CARBON	470	5%	1/4W
R703	1-249-422-11	CARBON	2. 7K	5%	1/4W
R704	1-247-858-11	CARBON	13K	5%	1/4W
R705	1-249-429-11	CARBON	10K	5%	1/4W
R706	1-249-417-11	CARBON	1K	5%	1/4W
R707	1-247-850-11	CARBON	6. 2K	5%	1/4W
R708	1-249-422-11	CARBON	2. 7K	5%	1/4W
R709	1-249-429-11	CARBON	10K	5%	1/4W
R710	1-249-429-11	CARBON	10K	5%	1/4W
R711	1-249-417-11	CARBON	1K	5%	1/4W
R712	1-249-432-11	CARBON	18K	5%	1/4W
R713	1-249-423-11	CARBON	3. 3K	5%	1/4W
R714	1-249-433-11	CARBON	22K	5%	1/4W
R715	1-249-435-11	CARBON	33K	5%	1/4W
R801	1-249-429-11	CARBON	10K	5%	1/4W
R802	1-247-903-00	CARBON	1M	5%	1/4W
R803	1-249-434-11	CARBON	27K	5%	1/4W
R804	1-249-434-11	CARBON	27K	5%	1/4W
R805	1-249-435-11	CARBON	33K	5%	1/4W
R806	1-249-435-11	CARBON	33K	5%	1/4W
R807	1-249-434-11	CARBON	27K	5%	1/4W
R808	1-247-895-00	CARBON	470K	5%	1/4W
R809	1-247-895-00	CARBON	470K	5%	1/4W
R810	1-249-434-11	CARBON	27K	5%	1/4W
R811	1-249-435-11	CARBON	33K	5%	1/4W
R812	1-249-435-11	CARBON	33K	5%	1/4W

MAIN

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Ref. No.	Part No.	Description	Remark		
R813	1-249-421-11	CARBON	2. 2K	5%	1/4W
R814	1-249-421-11	CARBON	2. 2K	5%	1/4W
R815	1-249-421-11	CARBON	2. 2K	5%	1/4W
R816	1-249-421-11	CARBON	2. 2K	5%	1/4W
R817	1-249-393-11	CARBON	10	5%	1/4W
R818	1-249-435-11	CARBON	33K	5%	1/4W
R821	1-247-903-00	CARBON	1M	5%	1/4W
R822	1-249-435-11	CARBON	33K	5%	1/4W
R823	1-249-425-11	CARBON	4. 7K	5%	1/4W
R824	1-249-435-11	CARBON	33K	5%	1/4W
R825	1-249-429-11	CARBON	10K	5%	1/4W
R826	1-249-420-11	CARBON	1. 8K	5%	1/4W
R827	1-249-435-11	CARBON	33K	5%	1/4W
R828	1-249-433-11	CARBON	22K	5%	1/4W
R829	1-249-433-11	CARBON	22K	5%	1/4W
R830	1-249-433-11	CARBON	22K	5%	1/4W
R831	1-249-421-11	CARBON	2. 2K	5%	1/4W
R834	1-249-425-11	CARBON	4. 7K	5%	1/4W
R835	1-249-435-11	CARBON	33K	5%	1/4W
R836	1-249-435-11	CARBON	33K	5%	1/4W
R837	1-249-431-11	CARBON	15K	5%	1/4W
R838	1-249-422-11	CARBON	2. 7K	5%	1/4W
R839	1-249-405-11	CARBON	100	5%	1/4W
R842	1-249-425-11	CARBON	4. 7K	5%	1/4W
R843	1-247-862-11	CARBON	20K	5%	1/4W
R844	1-247-862-11	CARBON	20K	5%	1/4W
R845	1-249-425-11	CARBON	4. 7K	5%	1/4W
R846	1-249-415-11	CARBON	680	5%	1/4W
R847	1-249-429-11	CARBON	10K	5%	1/4W
R848	1-249-415-11	CARBON	680	5%	1/4W
R849	1-249-429-11	CARBON	10K	5%	1/4W
R851	1-249-437-11	CARBON	47K	5%	1/4W
R852	1-247-866-11	CARBON	30K	5%	1/4W
R853	1-247-866-11	CARBON	30K	5%	1/4W
R854	1-249-437-11	CARBON	47K	5%	1/4W
R855	1-247-872-11	CARBON	51K	5%	1/4W
R856	1-247-872-11	CARBON	51K	5%	1/4W
R857	1-247-872-11	CARBON	51K	5%	1/4W
R858	1-247-872-11	CARBON	51K	5%	1/4W
R859	1-249-405-11	CARBON	100	5%	1/4W
R860	1-249-405-11	CARBON	100	5%	1/4W
R870	1-249-451-11	CARBON	2. 2	5%	1/4W
R871	1-249-451-11	CARBON	2. 2	5%	1/4W
< VARIABLE RESISTOR >					
RV101	1-241-630-11	RES, ADJ, CARBON 10K			
RV201	1-241-630-11	RES, ADJ, CARBON 10K			

Ref. No.	Part No.	Description	Remark		
< VIBRATOR >					
X801	1-577-358-21	VIBRATOR, CERAMIC 4MHz			
X802	1-577-358-21	VIBRATOR, CERAMIC 4MHz			

*	A-2006-399-A	MD-A BOARD, COMPLETE			

< CAPACITOR >					
C11	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C12	1-136-157-00	FILM	0. 022uF	5%	50V
C13	1-124-234-00	ELECT	22uF	20%	16V
C18	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C21	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C22	1-136-157-00	FILM	0. 022uF	5%	50V
C23	1-124-234-00	ELECT	22uF	20%	16V
C28	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C31	1-124-234-00	ELECT	22uF	20%	16V
C32	1-124-234-00	ELECT	22uF	20%	16V
C72	1-124-499-11	ELECT, NONPOLAR R	1uF	20%	50V
< JACK >					
*CNJ31	1-580-782-11	CONNECTOR, BOARD TO BOARD			
*CNJ72	1-580-411-11	SOCKET, CONNECTOR 4P			
< CONNECTOR >					
*CNP32	1-580-772-11	PIN, CONNECTOR (PC BOARD) 4P			
*CNP71	1-564-719-11	PIN, CONNECTOR (SMALL TYPE) 3P			
< IC >					
IC31	8-759-106-02	IC	uPC4570G2		
< JUMPER RESISTOR >					
JW1	1-216-295-00	METAL CHIP	0	5%	1/10W
JW51	1-216-296-00	METAL CHIP	0	5%	1/8W
JW52	1-216-296-00	METAL CHIP	0	5%	1/8W
JW53	1-216-296-00	METAL CHIP	0	5%	1/8W
JW54	1-216-296-00	METAL CHIP	0	5%	1/8W
< TRANSISTOR >					
Q71	8-729-602-36	TRANSISTOR	2SA1602		
< RESISTOR >					
R11	1-216-099-00	METAL CHIP	120K	5%	1/10W
R12	1-216-025-00	METAL CHIP	100	5%	1/10W
R13	1-216-100-00	METAL GLAZE	130K	5%	1/10W
R14	1-216-067-00	METAL CHIP	5. 6K	5%	1/10W
R21	1-216-099-00	METAL CHIP	120K	5%	1/10W

MD-A

MD-HX

Ref. No.	Part No.	Description	Remark		
R23	1-216-100-00	METAL GLAZE	130K	5%	1/10W
R24	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R31	1-216-033-00	METAL CHIP	220	5%	1/10W
R32	1-216-033-00	METAL CHIP	220	5%	1/10W
R71	1-216-082-00	METAL GLAZE	24K	5%	1/10W
R72	1-216-081-00	METAL CHIP	22K	5%	1/10W
R73	1-216-089-00	METAL CHIP	47K	5%	1/10W
R74	1-216-089-00	METAL CHIP	47K	5%	1/10W

< VARIABLE RESISTOR >

RV11	1-241-627-11	RES, ADJ. CARBON 1K
RV21	1-241-627-11	RES, ADJ. CARBON 1K
RV71	1-241-630-11	RES, ADJ. CARBON 10K
RV72	1-241-630-11	RES, ADJ. CARBON 10K

* A-2006-401-A MD-HX BOARD, COMPLETE

< CAPACITOR >

C11	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C12	1-136-157-00	FILM	0.022uF	5%	50V
C13	1-124-234-00	ELECT	22uF	20%	16V
C18	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C21	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C22	1-136-157-00	FILM	0.022uF	5%	50V
C23	1-124-234-00	ELECT	22uF	20%	16V
C28	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C31	1-124-234-00	ELECT	22uF	20%	16V
C32	1-124-234-00	ELECT	22uF	20%	16V
C33	1-124-234-00	ELECT	22uF	20%	16V
C51	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C52	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C53	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C54	1-136-601-11	FILM	0.01uF	5%	630V
C56	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C57	1-164-346-11	CERAMIC CHIP	1uF		16V
C71	1-164-346-11	CERAMIC CHIP	1uF		16V
C80	1-124-234-00	ELECT	22uF	20%	16V
C81	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C82	1-136-157-00	FILM	0.022uF	5%	50V
C83	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C84	1-136-478-11	FILM	470PF	5%	630V
C85	1-136-433-11	FILM	100PF	5%	630V
C86	1-163-143-00	CERAMIC CHIP	0.0012uF	5%	50V
C87	1-136-273-91	FILM	75PF	5%	630V
C88	1-163-003-11	CERAMIC CHIP	330PF	10%	50V
C89	1-124-234-00	ELECT	22uF	20%	16V
C90	1-107-045-00	MICA	3.9PF		500V
C91	1-164-232-11	CERAMIC CHIP	0.01uF		50V

Ref. No.	Part No.	Description	Remark		
C92	1-136-157-00	FILM	0.022uF	5%	50V
C93	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C94	1-136-478-11	FILM	470PF	5%	630V
C95	1-136-433-11	FILM	100PF	5%	630V
C96	1-163-143-00	CERAMIC CHIP	0.0012uF	5%	50V
C97	1-136-273-91	FILM	75PF	5%	630V
C98	1-163-003-11	CERAMIC CHIP	330PF	10%	50V
C99	1-164-005-11	CERAMIC CHIP	0.47uF		25V

< CONNECTOR >

*CNP31	1-580-782-11	CONNECTOR, BOARD TO BOARD
*CNP32	1-580-781-11	PIN, CONNECTOR (PC BOARD) 7P
*CNP33	1-580-782-11	CONNECTOR, BOARD TO BOARD
*CNP71	1-564-719-11	PIN, CONNECTOR (SMALL TYPE) 3P
*CNP72	1-580-411-11	SOCKET, CONNECTOR 4P

< DIODE >

D31	8-719-016-74	DIODE	1SS352
-----	--------------	-------	--------

< IC >

IC31	8-759-106-02	IC	uPC4570G2
IC81	8-759-106-56	IC	uPC1297CA

< COIL >

L81	1-410-780-11	INDUCTOR	27mH
L91	1-410-780-11	INDUCTOR	27mH

< TRANSISTOR >

Q51	8-729-808-01	TRANSISTOR	2SD1622-S
Q52	8-729-808-01	TRANSISTOR	2SD1622-S
Q53	8-729-808-01	TRANSISTOR	2SD1622-S
Q71	8-729-216-22	TRANSISTOR	2SA1162

< RESISTOR >

R11	1-216-099-00	METAL CHIP	120K	5%	1/10W
R12	1-216-025-00	METAL CHIP	100	5%	1/10W
R13	1-216-100-00	METAL GLAZE	130K	5%	1/10W
R14	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R21	1-216-099-00	METAL CHIP	120K	5%	1/10W
R22	1-216-025-00	METAL CHIP	100	5%	1/10W
R22	1-216-025-00	METAL CHIP	100	5%	1/10W
R23	1-216-100-00	METAL GLAZE	130K	5%	1/10W
R24	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R31	1-216-033-00	METAL CHIP	220	5%	1/10W
R32	1-216-033-00	METAL CHIP	220	5%	1/10W
R51	1-216-097-00	METAL CHIP	100K	5%	1/10W
R52	1-216-097-00	METAL CHIP	100K	5%	1/10W
R53	1-216-073-00	METAL CHIP	10K	5%	1/10W
R54	1-216-309-00	METAL CHIP	5.6	5%	1/10W

MD-HX

PANEL

Ref. No.	Part No.	Description	Remark		
R55	1-216-309-00	METAL CHIP	5.6	5%	1/10W
R57	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R71	1-216-082-00	METAL GLAZE	24K	5%	1/10W
R72	1-216-081-00	METAL CHIP	22K	5%	1/10W
R73	1-216-089-00	METAL CHIP	47K	5%	1/10W
R74	1-216-089-00	METAL CHIP	47K	5%	1/10W
R81	1-216-073-00	METAL CHIP	10K	5%	1/10W
R82	1-216-085-00	METAL CHIP	33K	5%	1/10W
R83	1-216-001-00	METAL CHIP	10	5%	1/10W
R84	1-216-101-00	METAL CHIP	150K	5%	1/10W
R85	1-216-075-00	METAL CHIP	12K	5%	1/10W
R91	1-216-073-00	METAL CHIP	10K	5%	1/10W
R92	1-216-085-00	METAL CHIP	33K	5%	1/10W
R93	1-216-001-00	METAL CHIP	10	5%	1/10W
R94	1-216-101-00	METAL CHIP	150K	5%	1/10W
R95	1-216-075-00	METAL CHIP	12K	5%	1/10W
< VARIABLE RESISTOR >					
RV11	1-241-627-11	RES, ADJ, CARBON 1K			
RV21	1-241-627-11	RES, ADJ, CARBON 1K			
RV71	1-241-630-11	RES, ADJ, CARBON 10K			
RV72	1-241-630-11	RES, ADJ, CARBON 10K			
RV81	1-241-122-11	RES, ADJ, CARBON 22K			
RV91	1-241-122-11	RES, ADJ, CARBON 22K			
< RELAY >					
RY31	1-515-726-11	RELAY			
< TRANSFORMER >					
T51	1-406-417-11	COIL, BIAS OSCILLATION			
T81	1-433-381-11	TRANSFORMER, BIAS OSCILLATOR			
T91	1-433-381-11	TRANSFORMER, BIAS OSCILLATOR			
< TEST PIN >					
*TP81	1-568-449-11	HOUSING, CONNECTOR(PC BOARD)3P			

*	A-2006-797-A	PANEL BOARD, COMPLETE			

*	3-362-478-21	HOLDER (T), LED			
*	4-921-941-01	CUSHION (FL)			
*	4-933-646-01	HOLDER (TC), FL TUBE			
< CAPACITOR >					
C406	1-162-292-31	CERAMIC	680PF	10%	50V
C407	1-162-292-31	CERAMIC	680PF	10%	50V
C408	1-162-292-31	CERAMIC	680PF	10%	50V
C901	1-161-379-00	CERAMIC	0.01uF	20%	25V

Ref. No.	Part No.	Description	Remark		
C902	1-161-379-00	CERAMIC	0.01uF	20%	25V
< CONNECTOR >					
*CN901	1-568-836-11	SOCKET, CONNECTOR 17P			
< DIODE >					
D901	8-719-301-38	LED	SEL2210S-C	(C FADE)	
D902	8-719-301-38	LED	SEL2210S-C	(FADE)	
D903	8-719-301-38	LED	SEL2210S-C	(EDIT)	
D904	8-719-301-38	LED	SEL2210S-C	(REC LEVEL)	
D906	8-719-987-63	DIODE	1N4148M		
< FILTER >					
FL901	1-519-741-11	INDICATOR TUBE, FLUORESCENT			
< IC >					
IC901	8-759-321-92	IC	HD614022S		
< TRANSISTOR >					
Q901	8-729-900-61	TRANSISTOR	DTA114ES		
< RESISTOR >					
R401	1-249-405-11	CARBON	100	5%	1/4W
R402	1-249-405-11	CARBON	100	5%	1/4W
R403	1-249-405-11	CARBON	100	5%	1/4W
R901	1-249-407-11	CARBON	150	5%	1/4W
R902	1-249-409-11	CARBON	220	5%	1/4W
R904	1-249-413-11	CARBON	470	5%	1/4W
R905	1-249-415-11	CARBON	680	5%	1/4W
R906	1-249-417-11	CARBON	1K	5%	1/4W
R907	1-249-420-11	CARBON	1.8K	5%	1/4W
R909	1-249-407-11	CARBON	150	5%	1/4W
R910	1-249-409-11	CARBON	220	5%	1/4W
R911	1-249-411-11	CARBON	330	5%	1/4W
R912	1-249-418-11	CARBON	1.2K	5%	1/4W
R927	1-249-411-11	CARBON	330	5%	1/4W
R928	1-249-411-11	CARBON	330	5%	1/4W
R929	1-249-411-11	CARBON	330	5%	1/4W
R930	1-249-411-11	CARBON	330	5%	1/4W
R931	1-247-903-00	CARBON	1M	5%	1/4W
R932	1-249-411-11	CARBON	330	5%	1/4W
< SWITCH >					
S901	1-554-303-21	SWITCH, TACTILE (HIGH SPEED)			
S902	1-554-303-21	SWITCH, TACTILE (NORMAL SPEED)			
S905	1-554-303-21	SWITCH, TACTILE (RESET)			
S906	1-554-303-21	SWITCH, TACTILE (MEMORY)			
S907	1-554-303-21	SWITCH, TACTILE (A/B)			

PANEL

REC VOL

SW-A

SW-B

Ref. No.	Part No.	Description	Remark
S909	1-554-303-21	SWITCH, TACTILE (C FADE)	
S910	1-554-303-21	SWITCH, TACTILE (FADE)	
S911	1-554-303-21	SWITCH, TACTILE (EDIT)	
S912	1-554-303-21	SWITCH, TACTILE (TIME)	
< VIBRATOR >			
X901	1-567-775-11	VIBRATOR, CERAMIC 4.19MHz	

*	1-643-528-11	REC VOL BOARD	

< CAPACITOR >			
C814	1-164-159-11	CERAMIC 0.1uF	50V
< CONNECTOR >			
*CN508	1-568-832-11	SOCKET, CONNECTOR 13P	
< DIODE >			
D805	8-719-987-63	DIODE 1N4148M	
D806	8-719-987-63	DIODE 1N4148M	
< IC >			
IC806	8-759-820-62	IC LB1639	
< TRANSISTOR >			
Q807	8-729-900-65	TRANSISTOR DTA144ES	
Q808	8-729-900-89	TRANSISTOR DTC144ES	
< RESISTOR >			
R125	1-249-435-11	CARBON 33K 5% 1/4W	
R225	1-249-435-11	CARBON 33K 5% 1/4W	
R832	1-249-412-11	CARBON 390 5% 1/4W	
R833	1-249-411-11	CARBON 330 5% 1/4W	
< VARIABLE RESISTOR >			
RV301	1-241-891-11	RES, VAR, CARBON 20KX3 (REC REVEL)	

*	1-634-841-14	SW-A BOARD	

	3-343-419-01	HOLDER (S SENSER A)	
< CONNECTOR >			
*CNP81	1-568-852-11	SOCKET, CONNECTOR 9P	

Ref. No.	Part No.	Description	Remark
< IC >			
IC81	8-719-710-03	DIODE NJL5165K-B	
< RESISTOR >			
R84	1-249-417-11	CARBON 1K 5% 1/4W	
R85	1-249-408-11	CARBON 180 5% 1/4W	
< SWITCH >			
S81	1-571-958-11	SWITCH, PUSH (1 KEY) (STOP)	
S82	1-571-281-21	SWITCH, LEAF (70EQ)	
S86	1-571-281-21	SWITCH, LEAF (HALF)	

*	1-634-841-14	SW-B BOARD	

	3-343-419-01	HOLDER (S SENSER A)	
< CONNECTOR >			
*CNP81	1-568-852-11	SOCKET, CONNECTOR 9P	
< IC >			
IC81	8-719-710-03	DIODE NJL5165K-B	
< RESISTOR >			
R81	1-249-414-11	CARBON 560 5% 1/4W	
R82	1-247-818-11	CARBON 300 5% 1/4W	
R83	1-247-834-11	CARBON 1.3K 5% 1/4W	
R84	1-249-417-11	CARBON 1K 5% 1/4W	
R85	1-249-408-11	CARBON 180 5% 1/4W	
< SWITCH >			
S81	1-571-958-11	SWITCH, PUSH (1 KEY) (STOP)	
S82	1-571-281-21	SWITCH, LEAF (70EQ)	
S83	1-571-281-21	SWITCH, LEAF (METAL)	
S84	1-571-281-21	SWITCH, LEAF (REC A)	
S85	1-571-281-21	SWITCH, LEAF (REC B)	
S86	1-571-281-21	SWITCH, LEAF (HALF)	

MISCELLANEOUS			

* 5	1-574-726-11	WIRE, FLAT TYPE (13 CORE)	
6	1-690-907-11	WIRE (FLAT TYPE) (17 CORE)	
69	1-690-906-11	WIRE (FLAT TYPE) (9 CORE)	
* 120	1-634-841-14	SW-A BOARD (DECK A)	
* 120	1-634-841-14	SW-B BOARD (DECK B)	
HP901	A-2003-837-A	BASE ASSY, HEAD (PB) (DECK A)	

Ref. No.	Part No.	Description	Remark
	HRPE901A-2003-838-A	BASE ASSY, HEAD (PB/REC/ERASE) (DECK B)	
M901A	X-3359-417-1	MOTOR ASSY (CAPSTAN) (DECK A)	
M901B	X-3359-417-1	MOTOR ASSY (CAPSTAN) (DECK B)	
M902A	X-3363-501-1	MOTOR ASSY (REEL) (DECK A)	
M902B	X-3363-501-1	MOTOR ASSY (REEL) (DECK B)	

ACCESSORIES & PACKING MATERIALS

* 3-350-154-01 CUSHION
 * 3-704-350-01 SHEET (STANDARD), PROTECTION

HARDWARE LIST

#1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S
#2	7-621-773-93	SCREW (PANEL 2.6 TP2)
#3	7-685-645-79	SCREW +BVTP 3X6 TYPE2 N-S
#4	7-621-775-00	SCREW +B 2.6X3
#5	7-627-556-08	SCREW +P 2.6X2.8

CDP-M43/M54

SERVICE MANUAL

AEP Model
UK Model
E Model

CDP-M43/M54

Australian Model
CDP-M43



CDP-M43 is the CD player section in
LBT-D507/ D607/ D707,
LBT-A50/A60/A70 series

Photo : CDP-M43

Model Name Using Similar Mechanism	CDP-497/597
CD Mechanism Type	CDM14L-5BD8A
Optical Pick-Up Block Type	BU-5BD8A

SPECIFICATIONS

Compact disc player

Frequency response	2 Hz to 20 kHz ± 0.5 dB
Signal-to-noise ratio	More than 105 dB CDP-M54 More than 100 dB CDP-M43
Dynamic range	More than 98 dB CDP-M54 More than 92 dB CDP-M43
Harmonic distortion	Less than 0.003% CDP-M54 Less than 0.004% CDP-M43
Channel separation	More than 102 dB CDP-M54 More than 95 dB CDP-M43

Outputs

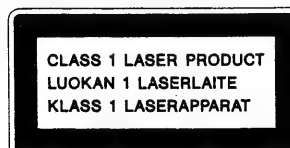
LINE OUT (FIXED)(phono jacks)	Output level 2 V(at 50 kilohms) Load impedance over 10 kilohms
LINE OUT (VARIABLE)(phono jacks) CDP-M54	Output level max. 2 V(at 50 kilohms) Load impedance over 50 kilohms
PHONES (stereo phone jack) CDP-M54	Output level max. 10 mW Load impedance 32 ohms

General

Power requirements	AEP, East European model : 220 - 230V AC, 50/60Hz UK, Australian model : 240 V AC, 50Hz E, Saudi Arabia, Malaysia model : 110 - 120, 220 - 240V AC, 50/60Hz
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Power consumption	12 W
Dimensions (approx., including projections)	355 \times 95 \times 325 mm(w/h/d) (14 \times 3 $\frac{3}{4}$ \times 12 $\frac{7}{8}$ inches)
Weight (approx.)	3.2 kg(7 lbs 1 oz)
Remote commander	(RM-D597) CDP-M54
Remote control system	Infrared control
Power requirements	3 V DC with two R6 (size AA) batteries
Dimensions (approx., including projections)	40 \times 20 \times 175 mm (w/h/d) (1 $\frac{5}{8}$ \times $\frac{7}{8}$ \times 7 inches)
Weight (approx.)	95 g(4 oz)
Supplied accessories	
Audio cord	(1)(2 Phono plugs-2 phono plugs)
Remote commander	(1) CDP-M54
Sony SUM-3 (NS) batteries	(2) CDP-M54

Design and specifications are subject to change without notice.





This Compact Disc player is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT label is located on the rear exterior.

COMPACT DISC PLAYER
SONY®

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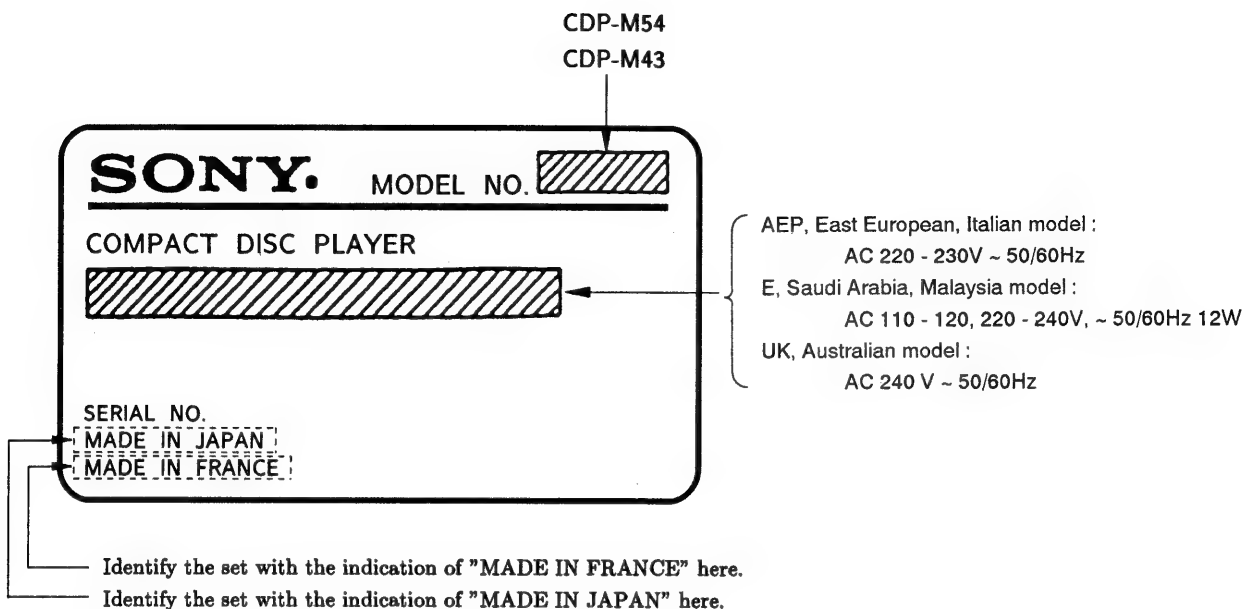
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SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK  OR DOTTED LINE WITH MARK  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

MODEL IDENTIFICATION

- Specification Label -

**NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT**

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.

During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.

The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

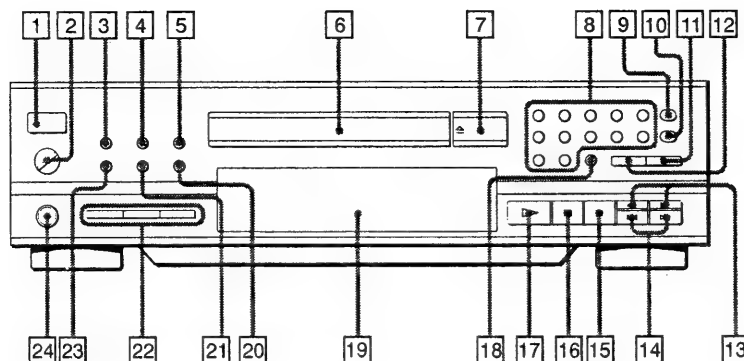
The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe more than 30cm away from the objective lens.

SECTION 1 GENERAL

This section is extracted from instruction manual.

1-1 IDENTIFYING THE PARTS

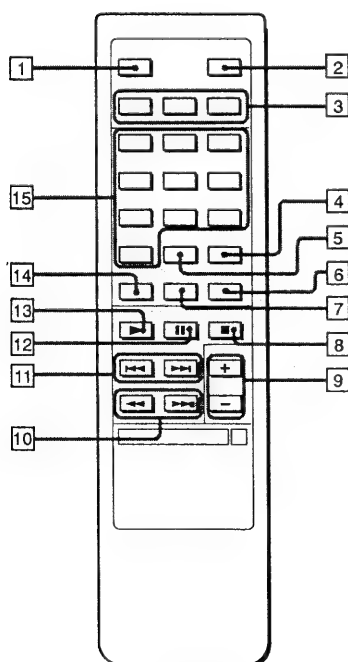
CDP-M54 model



Front Panel

- | | |
|---|----------------------------------|
| 1 POWER switch (20) | 15 ■ (stop) button (22) |
| 2 LINE OUT/PHONE LEVEL control (14) | 16 ■ (pause) button (22) |
| 3 MUSIC SCAN button (40) | 17 ► (play) button (22) |
| 4 A.SPACE/A.CUE button (28, 62) | 18 > 12 (over 12) button (24) |
| 5 PEAK SEARCH button (60) | 19 Display window (20) |
| 6 Disc tray (20) | 20 FADER button (46) |
| 7 ▲ OPEN/CLOSE button (20) | 21 REPEAT button (44) |
| 8 Numeric buttons (24, 38, 48, 52) | 22 Play mode buttons |
| 9 EDIT/TIME FADE button (52, 58) | CONTINUE button (30, 34, 38, 56) |
| 10 TIME SET button (54, 58) | SHUFFLE button (30, 34, 38, 56) |
| 11 CLEAR (program clear) button (36, 42) | PROGRAM button (34, 48) |
| 12 CHECK (program check) button (36) | 23 TIME button (22) |
| 13 ◀◀/▶▶ (manual search) buttons (26, 46) | 24 PHONES jack |
| 14 ◀◀/▶▶ (AMS*) buttons (24, 48) | |

* AMS is the abbreviation of Automatic Music Sensor.



Remote Commander CDP-M54

- | |
|---|
| 1 A. SPACE/A. CUE button (28, 62) |
| 2 MUSIC SCAN button (40) |
| 3 Play mode buttons |
| CONTINUE button (30, 34, 38, 56) |
| SHUFFLE button (30, 34, 38, 56) |
| PROGRAM button (34, 48) |
| 4 CLEAR (program clear) button (36, 42) |
| 5 > 10 (over 10) button (24) |
| 6 FADER button (46) |
| 7 REPEAT button (44) |
| 8 ■ (stop) button (22) |
| 9 LINE OUT LEVEL buttons (14) |
| 10 ◀◀/▶▶ (manual search) buttons (26, 46) |
| 11 ◀◀/▶▶ (AMS*) buttons (24, 48) |
| 12 ■ (pause) button (22) |
| 13 ► (play) button (22) |
| 14 TIME button (22) |
| 15 Numeric buttons (24, 38, 48, 52) |

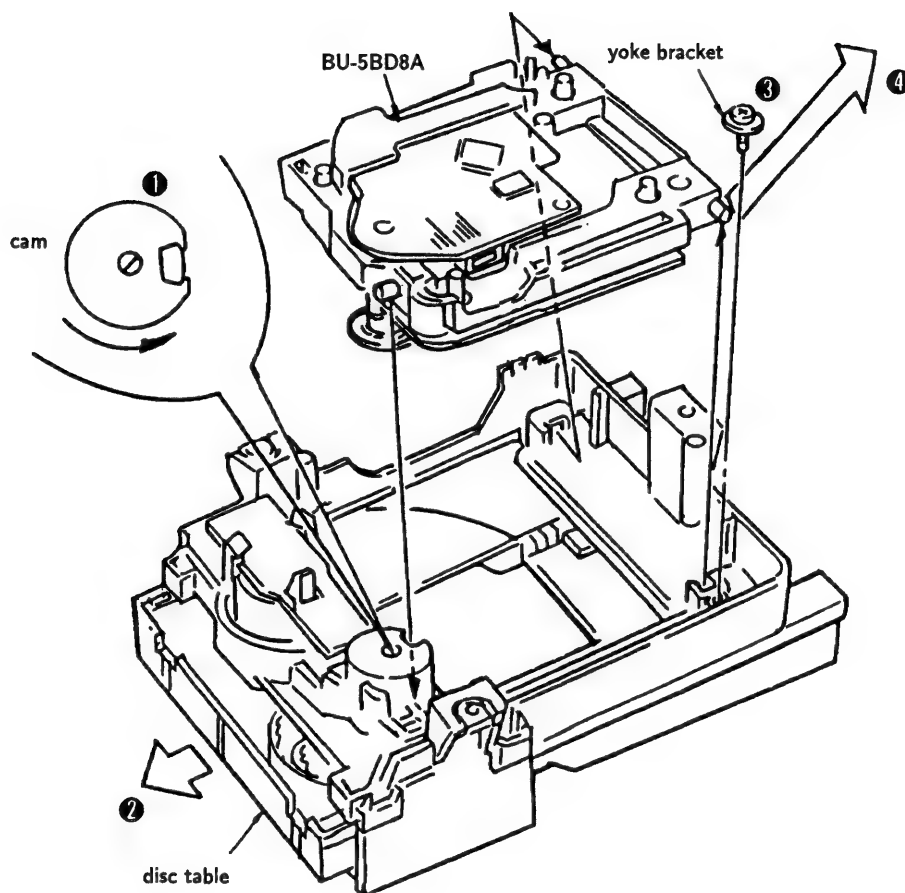
* AMS is the abbreviation of Automatic Music Sensor.

SECTION 2 DISASSEMBLY

Note :

Follow the disassembly procedure in the numerical order given.

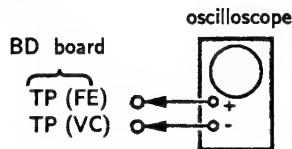
- ❶ Turn the cam to the direction of arrow (Counter clock wise) by minus screw driver.
- ❷ Take off the disc table.
- ❸ Remove the yoke bracket.
- ❹ Remove the MD (BU-5BD8A) to the direction of arrow.



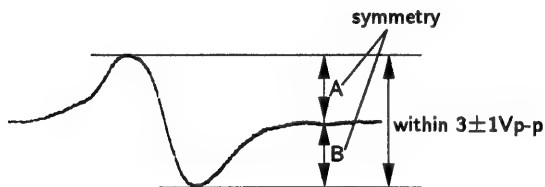
SECTION 3 ELECTRICAL BLOCK CHECKING

Note :

1. CD Block basically constructed to operate with-out adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use the oscilloscope with more than 10M Ω im-pedance.
4. Clean an object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

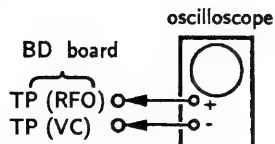
S Curve Check**Procedure :**

1. Connect oscilloscope to test point TP (FE) on BD board.
2. Connect between test point TP (FEI) and TP (VC) by lead wire.
3. Turned Power switch on and actuate the focus serch. (actuate the focus serch when disc table is moving in and out.)
4. Check the oscilloscope waveform (S curve) is symmetrical between A and B. And confirm peak to peak level within $3\pm 1V_{p-p}$.

S curve waveform

5. After check, remove the lead wire connected in step 2.

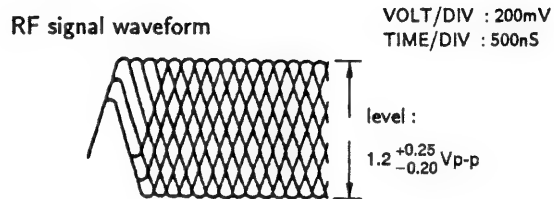
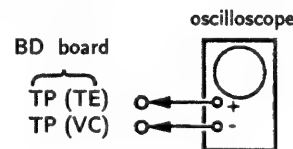
Note : • Try to mesure several times to make sure that the ratio of A : B or B : A is more than 10 : 7.
• Take sweep time as long as possible and light up the brightness to obtain best waveform.

RF Level Check**Procedure :**

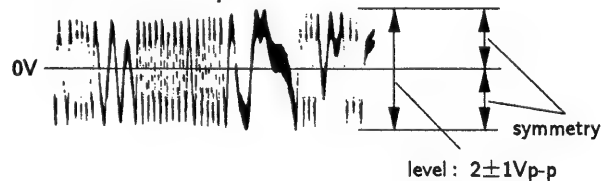
1. Connect oscilloscope to test point TP (RFO) on BD board.
2. Turn Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

Note :

Clear RF signal waveform means that the shape "◇" can be clearly distinguished at the center of the waveform.

**E-F Balance Check****Procedure :**

1. Connect test point TP (ADJ) to ground and TP (TEI) to TP (VC) with lead wire.
2. Connect oscilloscope to test point TP (TE) on BD board.
3. Turn Power switch on.
4. Put disc (YEDS-18) in and playback.
5. Confirm that the osilloscope waveform is sym-metrical on the top and bottom in relation to 0V, and check this level.

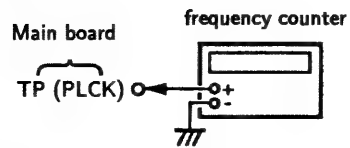
Traverse oscilloscope

6. Remove the lead wire connected in step 1.

RF PLL Free-run Frequency Check

Procedure :

1. Connect frequency counter to test point (PLCK) with lead wire.

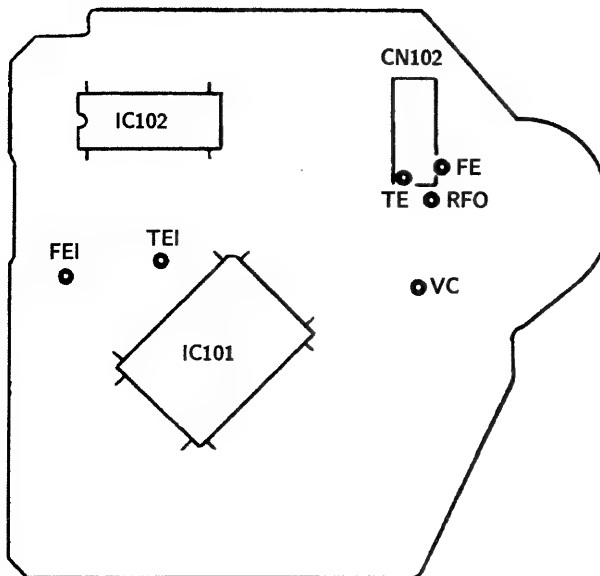


2. Turn Power switch on.
3. Confirm that reading on frequency counter is 4.3218 MHz.

Adjustment Location :

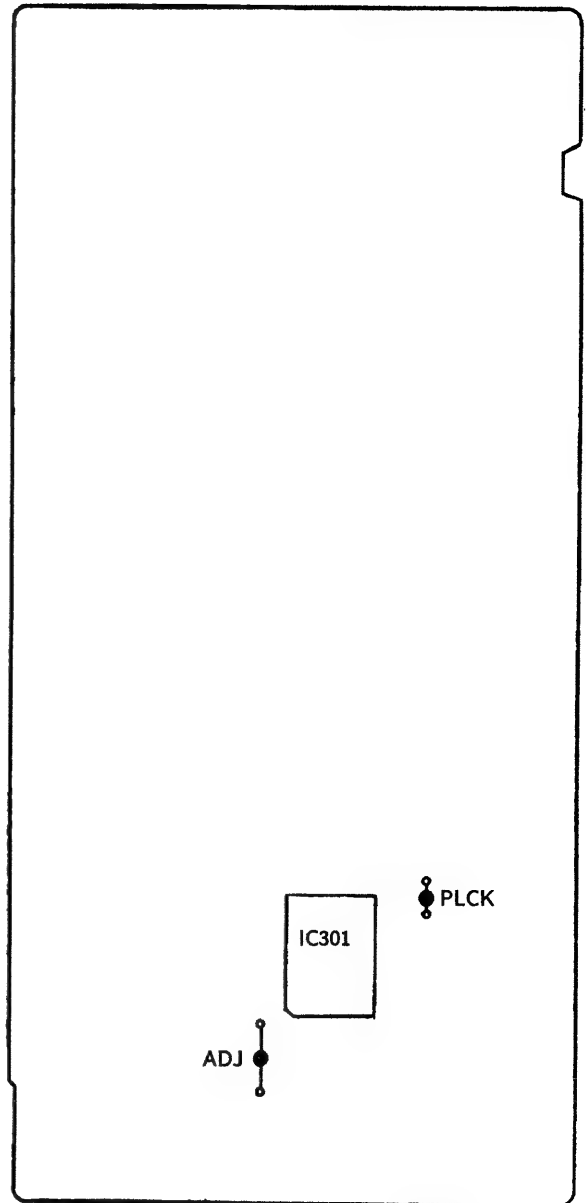
【BD BOARD】

- Solder side -



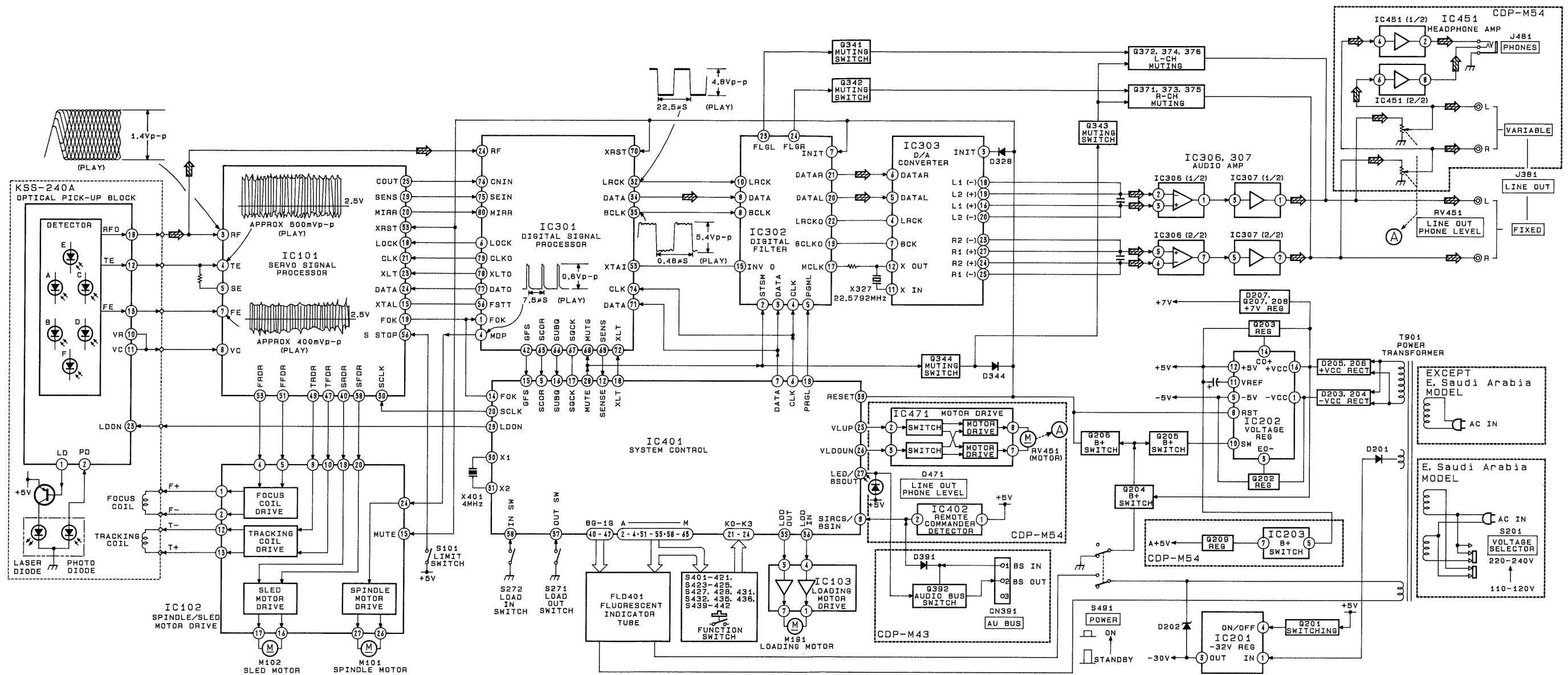
【MAIN BOARD】

- Component side -

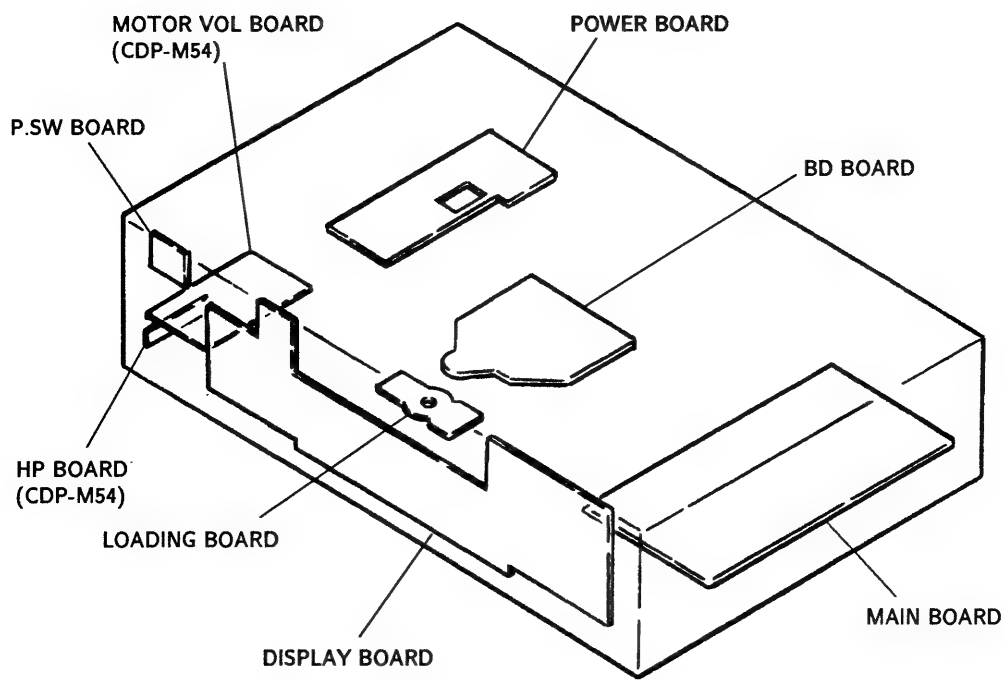


SECTION 4 DIAGRAMS

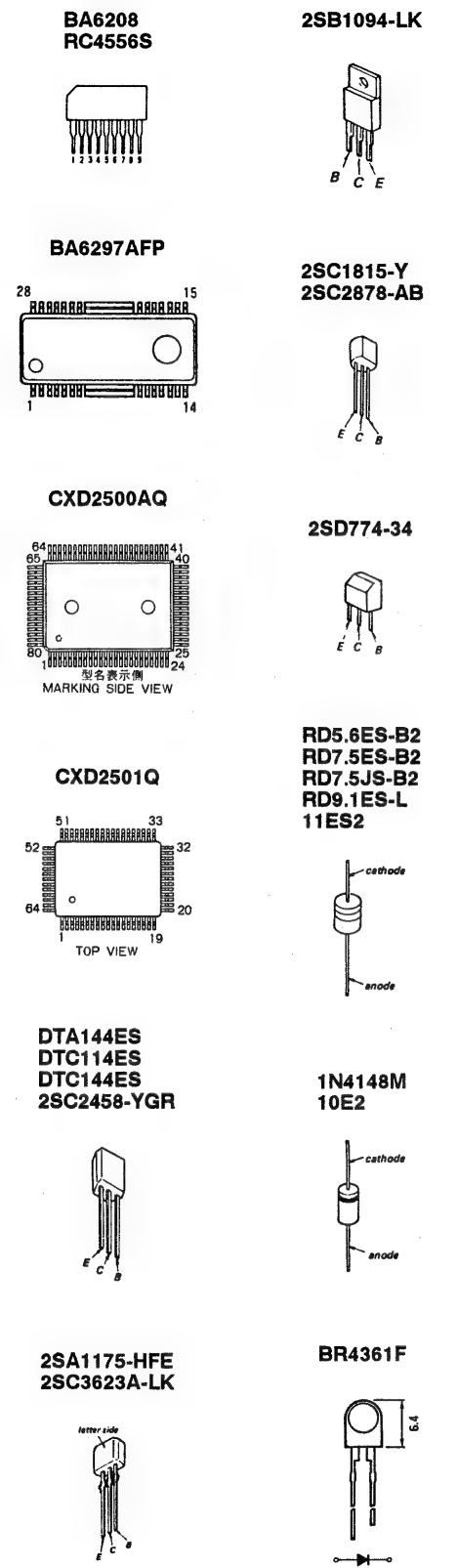
4-1 BLOCK DIAGRAM



4-2 CIRCUIT BOARDS LOCATION



4-3 SEMICONDUCTOR LEAD LAYOUTS



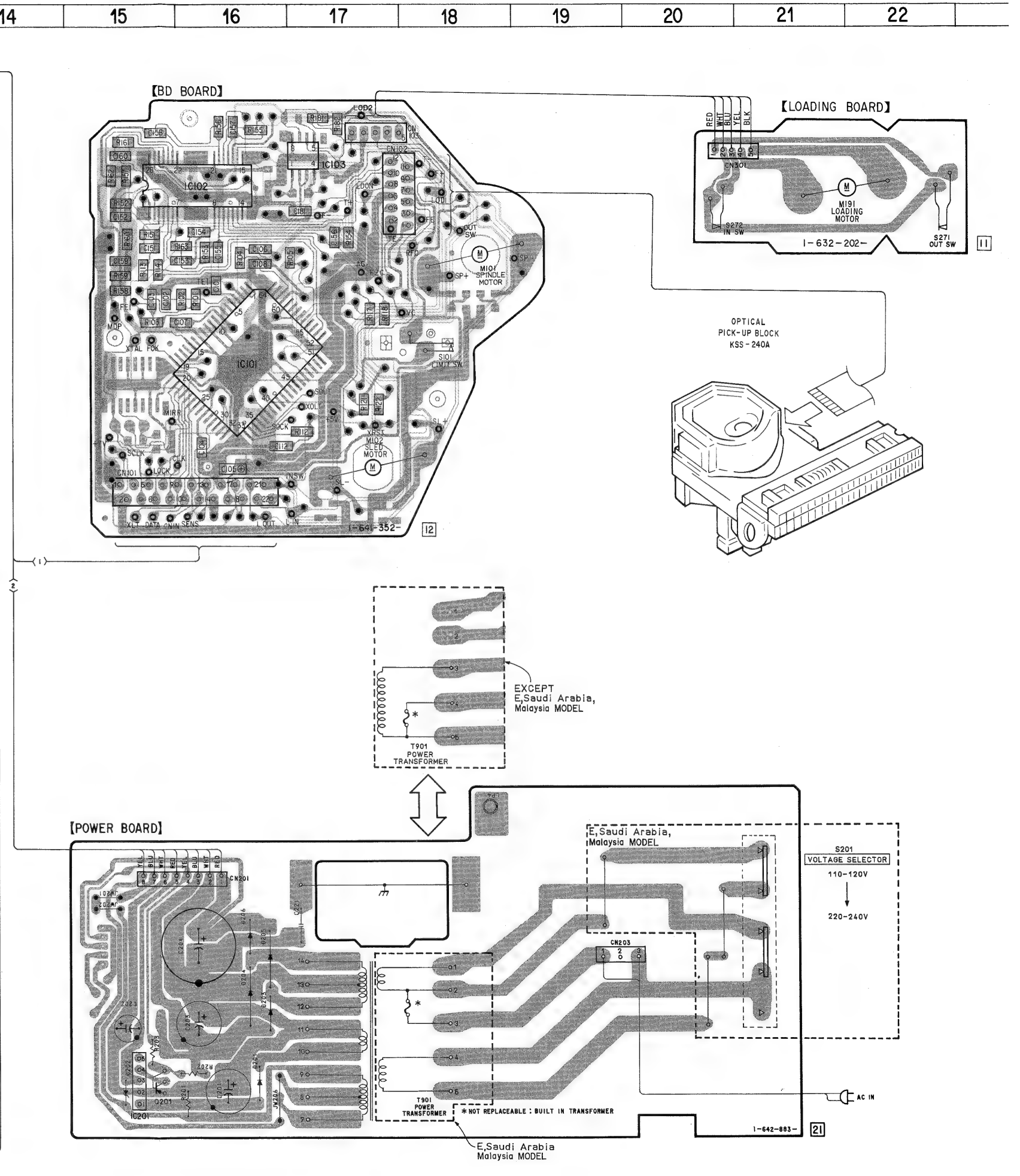
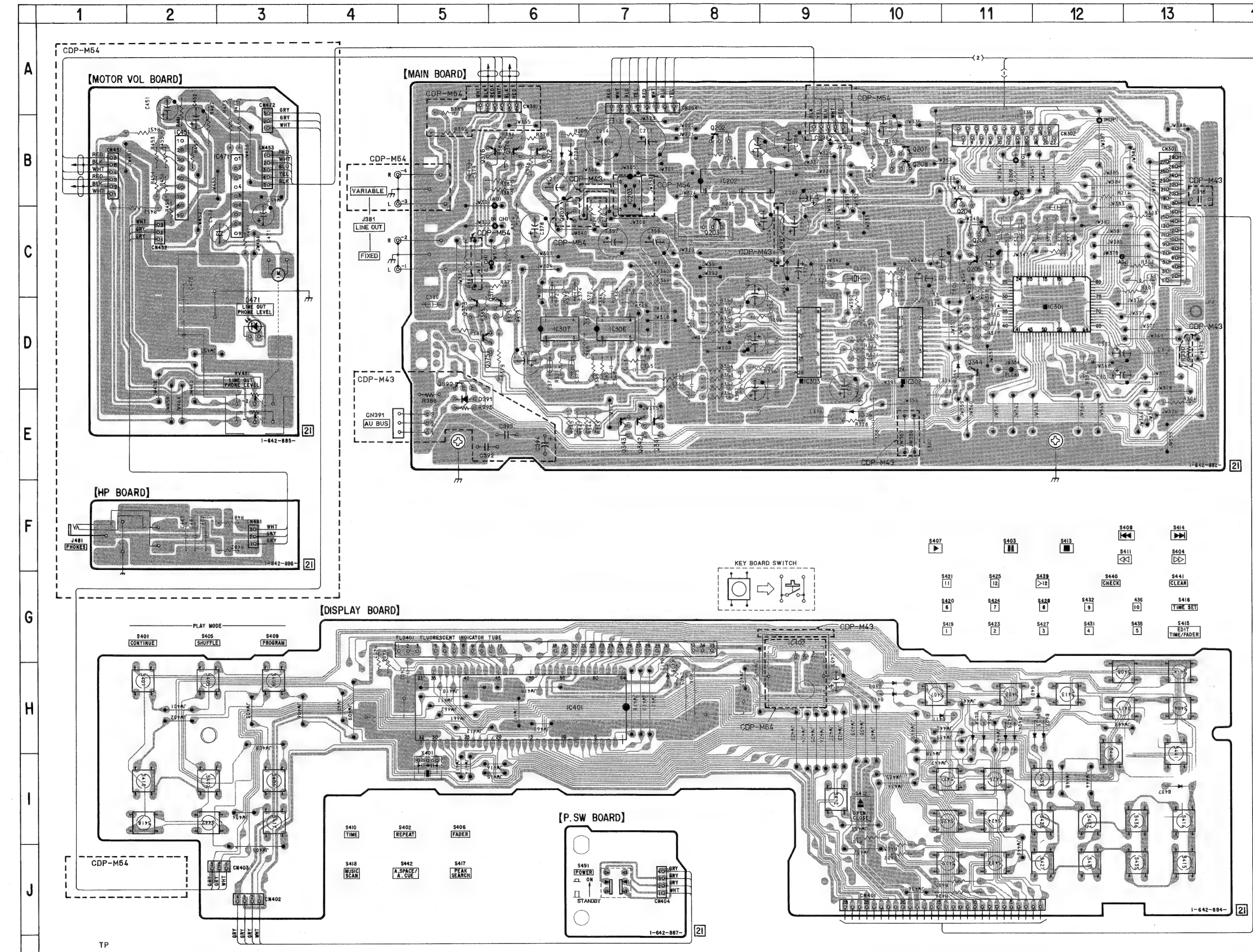
• SEMICONDUCTOR LOCATION

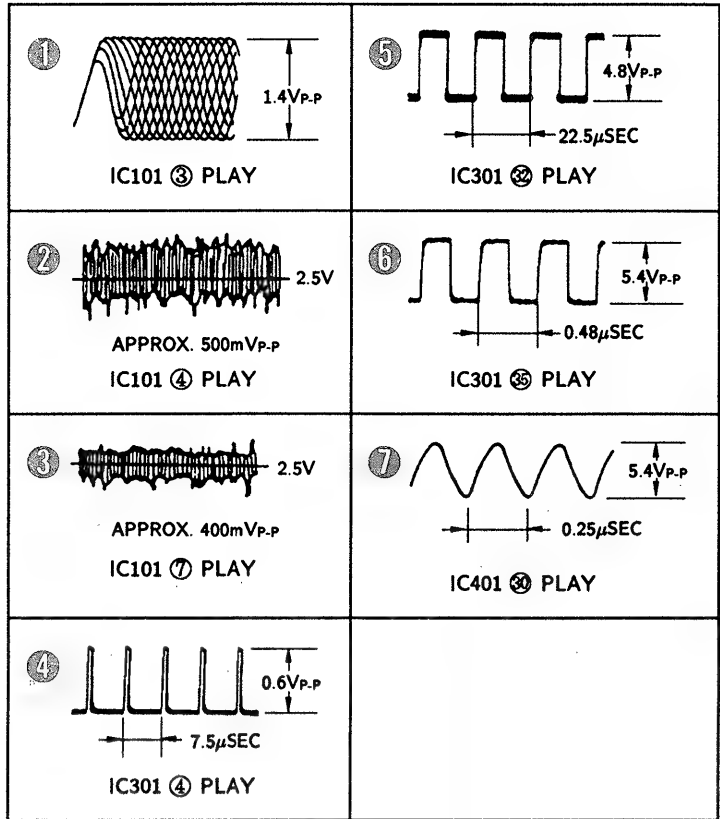
Ref. No.	Location	Ref. No.	Location
D201	J-16	IC203	B-7
D202	J-15	IC301	D-12
D203	I-16	IC302	D-10
D204	I-16	IC303	D-9
D205	I-16	IC306	D-7
D206	I-16	IC307	D-6
D207	B-10	IC401	H-6
D208	B-6	IC402	G-9
D209	B-6	IC451	B-2
D328	E-10	IC471	B-3
D344	D-11		
D391	E-5	Q201	J-15
D401	H-12	Q202	B-8
D402	H-12	Q203	C-8
D403	H-12	Q204	B-11
D404	H-11	Q205	C-11
D405	H-11	Q206	C-11
D406	H-11	Q207	B-10
D407	I-13	Q208	B-10
D408	H-11	Q209	C-6
		Q341	E-7
D409	H-10		
D410	H-10	Q342	E-7
D411	H-10	Q343	E-7
D412	H-7	Q344	D-11
D471	D-3	Q371	D-6
		Q372	B-6
IC101	C-16	Q373	D-5
IC102	B-16	Q374	B-6
IC103	B-17	Q375	D-5
IC201	J-15	Q376	B-6
IC202	B-8	Q392	D-5

Note :

- : parts extracted from the component side.
- ◻ : parts mounted on the conductor side.
- : Through hole.
- : Pattern on the side which is seen.
- : Pattern of the rear side.

4-4 PRINTED WIRING BOARDS






**FLD401**

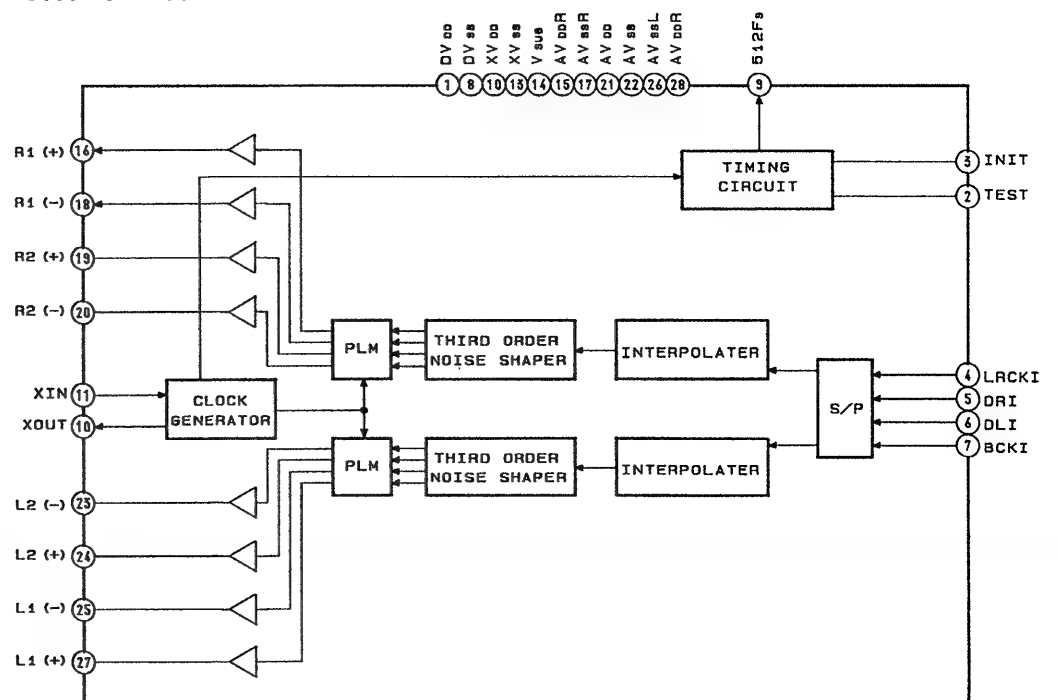
	8G	7G	6G	5G	4G	3G	2G	1G
a							1	3
b							2	4
c							5	
d							6	8
e							7	9
f							10	
g								
h			PEAK	MIN	STEP	SEC	11	13
i			-	•			12	14
j	SHUFFLE		JUST	EDIT		TIME		15
k	PROGRAM		A. CUE	A			16	18
l	REPEAT		LINK	B			17	19
m	1		A. SPACE					20

Note :

- All capacitors are in μF unless otherwise noted. $\text{pF} : \mu\text{F}$ 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}\text{W}$ or less unless otherwise specified.
- Δ : internal component.

Note: The components identified by mark or dotted line with mark are critical for safety. Replace only with part number specified.

-  : B + Line
-  : B - Line
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- no mark : STOP
- Voltages are taken with a VOM (Input impedance 10M Ω).
- Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with an oscilloscope.
- Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
-  : CD





SECTION 5 EXPLODED VIEWS

NOTE :

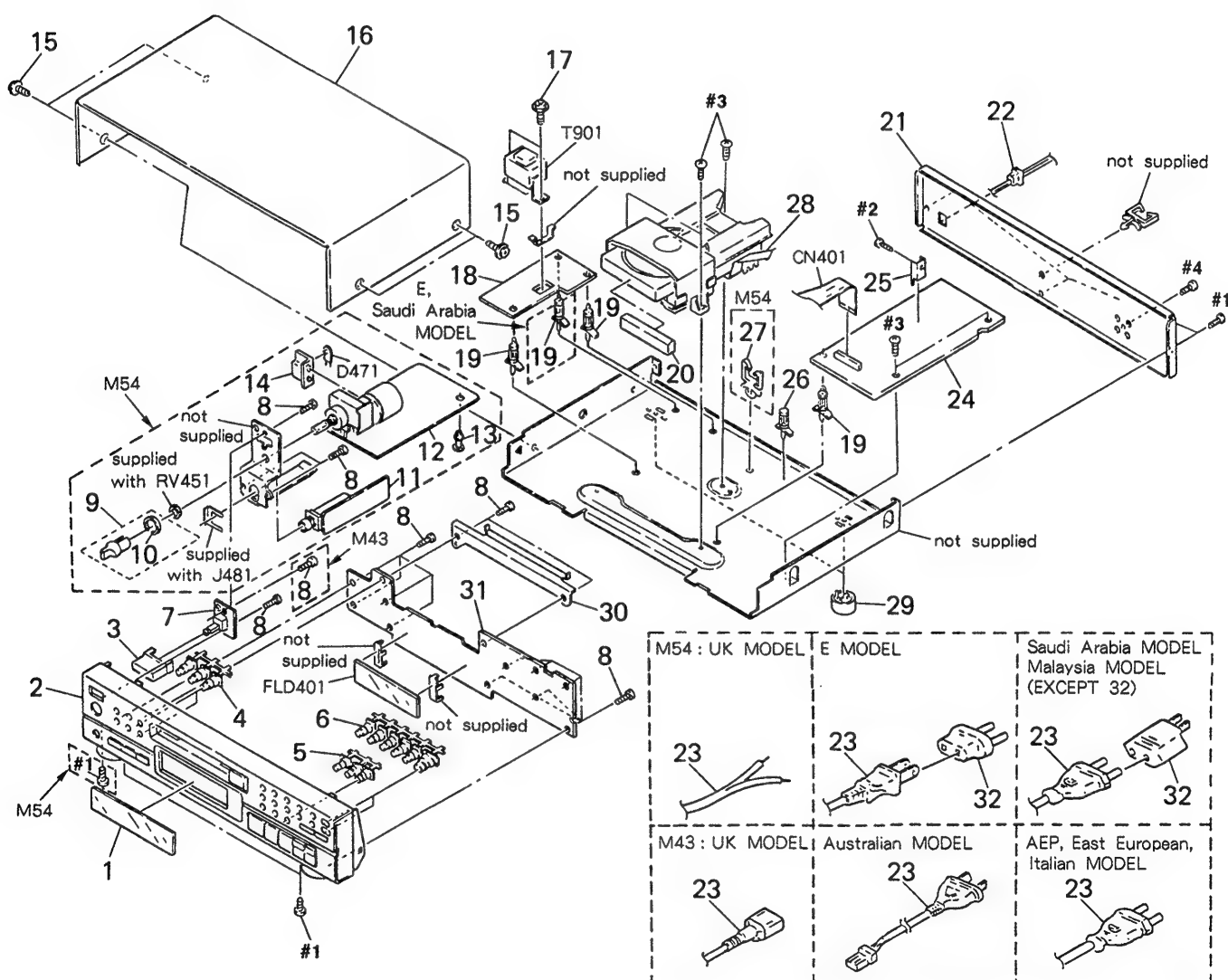
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Color indication of Appearance Parts
Example :
KNOB, BALANCE (WHITE)....(RED)

↑ ↑
Parts color Cabinet's color

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of this parts list.

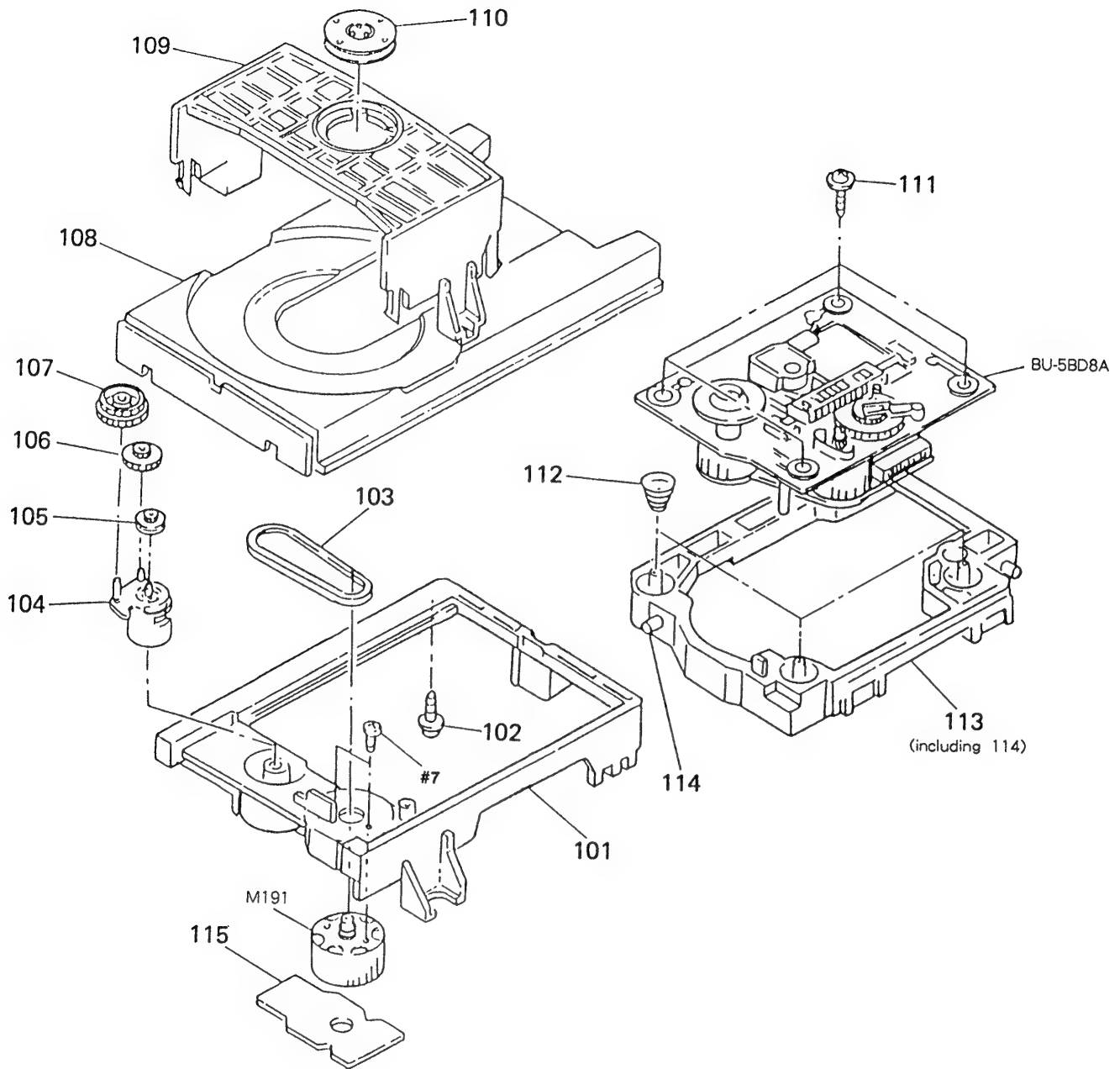
The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

5-1 CABINET SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	4-950-182-01	PLATE, INDICATION (M54)		* 21	4-941-467-11	PANEL (ALSACE), BACK (MADE IN FRANCE M43:AEP, East, European, Italian, UK)	
1	4-950-182-11	PLATE, INDICATION (M43)		21	4-941-552-21	PANEL (ALSACE), BACK (MADE IN JAPAN M54:AEP, UK)	
2	X-4942-345-1	PANEL ASSY, FRONT (BLACK) (M54)		* 21	4-949-433-01	PANEL, BACK (MADE IN JAPAN M54:AEP)	
2	X-4942-346-1	PANEL ASSY, FRONT (GRAY) (M43:EXCEPT Italian)		* 21	4-949-433-22	PANEL, BACK (M54:E)	
2	X-4942-347-1	PANEL ASSY, FRONT (BLACK) (M43:Italian)		* 21	4-949-433-41	PANEL, BACK (MADE IN FRANCE M43: AEP, East European)	
3	4-950-176-01	BUTTON (POWER) (GRAY) (M43:EXCEPT Italian)		* 21	4-949-433-51	PANEL, BACK (M43:E, Saudi Arabia, Malaysia)	
3	4-950-176-11	BUTTON (POWER) (BLACK) (M43:Italian, M54)		* 21	4-949-433-61	PANEL, BACK (M43:Australian)	
4	4-950-177-01	BUTTON (G) (GRAY) (M43:EXCEPT Italian)		* 22	3-703-244-00	BUSHING (2104), CORD (EXCEPT E)	
4	4-950-177-11	BUTTON (G) (BLACK) (M43:Italian, M54)		* 22	3-703-571-11	BUSHING (S) (4516), CORD (E)	
5	4-950-179-01	BUTTON (MC/B) (GRAY) (M43:EXCEPT Italian)		△23	1-558-946-21	CORD, POWER (M54:UK)	
5	4-950-179-11	BUTTON (MC/B) (BLACK) (M43:Italian, M54)		△23	1-574-358-31	CORD, POWER (WITH CONNECTOR) (Australian)	
6	4-950-178-01	BUTTON (MC/A) (GRAY) (M43:EXCEPT Italian)		△23	1-575-651-21	CORD, POWER (AEP, East European, Italian, Saudi Arabia, Malaysia)	
6	4-950-178-11	BUTTON (MC/A) (BLACK) (M43:Italian, M54)		△23	1-575-653-21	CORD, POWER (E)	
				△23	1-590-379-11	CORD, POWER (M43:UK)	
* 7	1-642-887-21	P.SW BOARD		* 24	A-4649-105-A	MAIN BOARD, COMPLETE (M54)	
8	4-928-635-01	SCREW, +BV (2.6X8) TAPPING		* 24	A-4649-111-A	MAIN BOARD, COMPLETE (M43)	
9	A-4604-901-A	KNOB (HP) ASSY (M54)					
10	4-948-469-01	SPRING, RING (M54)		* 25	4-941-237-01	HEAT SINK (M54:UK)	
11	1-642-886-21	HP BOARD (M54)		25	4-902-345-01	HEAT SINK (M43, M54:EXCEPT UK)	
* 12	A-4649-107-A	MOTOR VOL BOARD, COMPLETE (M54)		* 26	3-349-025-41	HOLDER, PC BOARD	
* 13	3-676-567-00	SPACER (M54:E, AEP)		* 27	4-314-320-00	HOLDER, WIRE (M54)	
* 14	4-922-980-01	HOLDER (LED) (M54)		28	1-575-160-11	WIRE, FLAT TYPE (22 CORE)	
				29	4-931-169-01	FOOT	
15	3-363-099-01	SCREW (CASE +3X8 TP2) (MADE IN FRANCE)		30	4-950-180-01	REINFORCEMENT (MD)	
15	3-704-366-01	SCREW (CASE) (M3X8) (MADE IN JAPAN)					
16	4-919-376-31	CASE (BLACK) (M43:Italian, M54)		* 31	A-4649-104-A	DISP BOARD, COMPLETE (M54)	
16	4-919-376-81	CASE (GRAY) (M43:EXCEPT Italian)		* 31	A-4649-110-A	DISP BOARD, COMPLETE (M43)	
				△32	1-569-007-11	ADAPTER, CONVERSION 2P (E)	
17	4-886-821-11	SCREW, S TIGHT, +PTTWH 3X6		△32	1-569-008-11	ADAPTER, CONVERSION 2P (Saudi Arabia)	
* 18	1-642-883-21	POWER BOARD		CN401	1-535-987-11	JAMPER, FILM (WITH TERMINAL)	
* 19	4-924-098-31	HOLDER, PC BOARD					
				D471	8-719-970-49	DIODE BR4361F (M54)	
20	4-950-174-01	PANEL, LOADING (GRAY) (M43:EXCEPT Italian)		△T901	1-449-922-11	TRANSFORMER, POWER (EXCEPT E, Saudi Arabia, Malaysia)	
20	4-950-174-11	PANEL, LOADING (BLACK) (M54)		△T901	1-449-923-11	TRANSFORMER, POWER (E, Saudi Arabia, Malaysia)	
20	4-950-174-21	PANEL, LOADING (BLACK) (M43:Italian)					

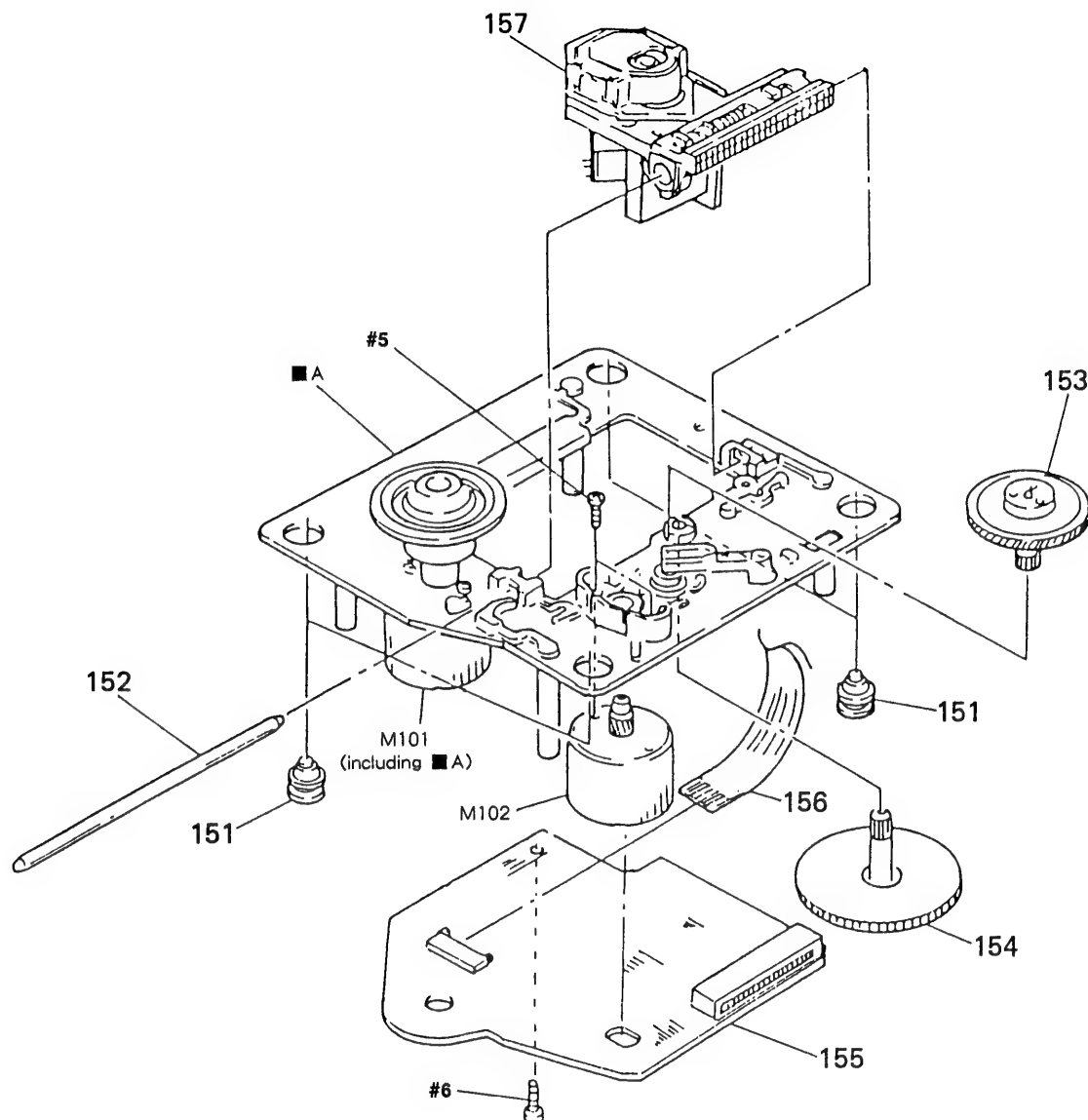
5-2 MD SECTION (CDM14L-5BD8A)



Ref. No.	Part No.	Description	Remark
101	4-933-111-01	CHASSIS (MD) (MADE IN JAPAN)	
101	4-933-111-11	CHASSIS (MD) (MADE IN FRANCE)	
* 102	4-917-583-21	BRACKET, YOKE	
103	4-927-649-01	BELT	
104	4-933-109-01	CAM	
105	4-927-651-01	PULLEY (S)	
106	4-927-628-01	GEAR (C)	
107	4-933-107-01	GEAR (PL)	
108	4-948-894-01	TABLE (ALS), DISK (MADE IN FRANCE)	
108	4-949-336-01	TABLE, DISK (MADE IN JAPAN)	

Ref. No.	Part No.	Description	Remark
109	4-933-110-01	HOLDER (MG)	
* 110	1-452-538-11	MAGNET	
111	4-933-134-01	SCREW (+PTPWH M2. 6X6)	
112	4-917-541-01	SPRING (B) (MADE IN FRANCE)	
112	4-948-503-01	SPRING (BU), COMPRESSION (MADE IN JAPAN)	
113	4-933-129-01	HOLDER (BU)	
114	4-933-108-01	SHAFT (CAM)	
* 115	1-632-202-11	LOADING BOARD	
M191	A-4604-363-A	MOTOR (L) ASSY	

5-3 OPTICAL PICK-UP BLOCK (BU-5BD8A)



Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
151	4-933-126-01	INSULATOR (A)		156	1-575-001-11	WIRE, FLAT TYPE (12 CORE)	
152	4-917-565-01	SHAFT, SLED		\triangle 157	8-848-144-11	DEVICE, OPTICAL KSS-240A	
153	4-917-567-01	GEAR (M)		M101	X-4917-523-3	BASE (OUTSERT) ASSY	
154	4-917-564-01	GEAR (P), FLATNESS		M102	X-4917-504-1	MOTOR ASSY	
* 155	A-4617-977-A	BD BOARD, COMPLETE					

BD

SECTION 6

ELECTRICAL PARTS LIST

NOTE :

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
All resistors are in ohms
METAL : Metal-film resistor
METAL OXIDE : Metal oxide-film resistor
F : nonflammable

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
In each case, u : μ , for example :
uA.... : μ A...., uPA.... : μ PA....
uPB.... : μ PB...., uPC.... : μ PC....
uPD.... : μ PD....
- CAPACITORS
uF : μ F
- COILS
uH : μ H

The components identified by mark Δ or dotted line with mark Δ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	A-4617-977-A	BD BOARD, COMPLETE *****				< RESISTOR >	
		< CAPACITOR >		R101	1-216-077-00	METAL CHIP 15K 5%	1/10W
C101	1-163-005-11	CERAMIC CHIP 470PF	10% 50V	R102	1-216-097-00	METAL CHIP 100K 5%	1/10W
C102	1-163-038-00	CERAMIC CHIP 0.1uF	25V	R103	1-216-077-00	METAL CHIP 15K 5%	1/10W
C103	1-163-005-11	CERAMIC CHIP 470PF	10% 50V	R104	1-216-085-00	METAL CHIP 33K 5%	1/10W
C104	1-164-505-11	CERAMIC CHIP 2.2uF	16V	R105	1-216-097-00	METAL CHIP 100K 5%	1/10W
C105	1-135-155-21	TANTALUM CHIP 4.7uF	10% 16V	R112	1-216-049-00	METAL CHIP 1K 5%	1/10W
C106	1-164-346-11	CERAMIC CHIP 1uF	16V	R113	1-216-077-00	METAL CHIP 15K 5%	1/10W
C107	1-164-505-11	CERAMIC CHIP 2.2uF	16V	R114	1-216-077-00	METAL CHIP 15K 5%	1/10W
C108	1-164-346-11	CERAMIC CHIP 1uF	16V	R117	1-216-077-00	METAL CHIP 15K 5%	1/10W
C112	1-163-038-00	CERAMIC CHIP 0.1uF	25V	R118	1-216-077-00	METAL CHIP 15K 5%	1/10W
C151	1-163-007-11	CERAMIC CHIP 680PF	10% 50V	R121	1-216-077-00	METAL CHIP 15K 5%	1/10W
C152	1-163-007-11	CERAMIC CHIP 680PF	10% 50V	R122	1-216-077-00	METAL CHIP 15K 5%	1/10W
C153	1-163-038-00	CERAMIC CHIP 0.1uF	25V	R151	1-216-070-00	METAL CHIP 7.5K 5%	1/10W
C154	1-164-336-11	CERAMIC CHIP 0.33uF	25V	R152	1-216-070-00	METAL CHIP 7.5K 5%	1/10W
C155	1-163-007-11	CERAMIC CHIP 680PF	10% 50V	R153	1-216-070-00	METAL CHIP 7.5K 5%	1/10W
C156	1-163-007-11	CERAMIC CHIP 680PF	10% 50V	R154	1-216-070-00	METAL CHIP 7.5K 5%	1/10W
C157	1-163-037-11	CERAMIC CHIP 0.022uF	10% 25V	R155	1-216-070-00	METAL CHIP 7.5K 5%	1/10W
C158	1-163-037-11	CERAMIC CHIP 0.022uF	10% 25V	R156	1-216-070-00	METAL CHIP 7.5K 5%	1/10W
C159	1-163-023-00	CERAMIC CHIP 0.015uF	5% 50V	R157	1-216-085-00	METAL CHIP 33K 5%	1/10W
C160	1-163-019-00	CERAMIC CHIP 0.0068uF	10% 50V	R158	1-216-076-00	METAL CHIP 13K 5%	1/10W
C181	1-163-038-00	CERAMIC CHIP 0.1uF	25V	R159	1-216-085-00	METAL CHIP 33K 5%	1/10W
		< CONNECTOR >		R160	1-216-081-00	METAL CHIP 22K 5%	1/10W
CN101	1-568-796-11	SOCKET, CONNECTOR 22P		R161	1-216-093-00	METAL CHIP 68K 5%	1/10W
CN102	1-568-795-11	SOCKET, CONNECTOR 12P		R162	1-216-085-00	METAL CHIP 33K 5%	1/10W
CN103	1-564-721-11	PIN, CONNECTOR (SMALL TYPE) 5P		R163	1-216-308-00	METAL CHIP 4.7 5%	1/10W
		< IC >		R181	1-216-021-00	METAL CHIP 68 5%	1/10W
IC101	8-752-344-48	IC CXD2501Q		R182	1-216-021-00	METAL CHIP 68 5%	1/10W
IC102	8-759-071-80	IC BA6297AFP					
IC103	8-759-040-83	IC BA6287F					

BD	DISP	HP
----	------	----

Ref. No.	Part No.	Description	Remark
< SWITCH >			
S101	1-572-085-11	SWITCH, LEAF (LIMIT SW)	

*	A-4649-104-A	DISP BOARD, COMPLETE (M54)	
*	A-4649-110-A	DISP BOARD, COMPLETE (M43)	

< CAPACITOR >			
C402	1-164-159-11	CERAMIC 0.1uF	50V
C403	1-126-154-11	ELECT 47uF	20% 6.3V
C404	1-161-494-00	CERAMIC 0.022uF	25V
C405	1-164-159-11	CERAMIC 0.1uF	50V
< CONNECTOR >			
CN401	1-535-987-11	JAMPER, FILM (WITH TERMINAL)	
< DIODE >			
D401	8-719-987-63	DIODE 1N4148M	
D402	8-719-987-63	DIODE 1N4148M	
D403	8-719-987-63	DIODE 1N4148M	
D404	8-719-987-63	DIODE 1N4148M	
D405	8-719-987-63	DIODE 1N4148M	
D406	8-719-987-63	DIODE 1N4148M	
D407	8-719-987-63	DIODE 1N4148M	
D408	8-719-987-63	DIODE 1N4148M	
D409	8-719-987-63	DIODE 1N4148M	
D410	8-719-987-63	DIODE 1N4148M	
D411	8-719-987-63	DIODE 1N4148M	
D412	8-719-121-24	DIODE RD9.1ESL	
< FLUORESCENT INDICATOR >			
FLD401	1-519-681-11	INDICATOR TUBE, FLUORESCENT	
< IC >			
IC401	8-759-061-40	IC uPD75216ACW-C73 (M54)	
IC401	8-759-070-44	IC uPD75216ACW-C93 (M43)	
IC402	8-741-100-48	IC SBX1610-59 (M54)	
< RESISTOR >			
R401	1-249-435-11	CARBON 33K 5%	1/4W
R402	1-249-435-11	CARBON 33K 5%	1/4W
R403	1-249-435-11	CARBON 33K 5%	1/4W
R404	1-249-435-11	CARBON 33K 5%	1/4W
R405	1-249-435-11	CARBON 33K 5%	1/4W
R406	1-249-425-11	CARBON 4.7K 5%	1/4W
R407	1-249-425-11	CARBON 4.7K 5%	1/4W
R408	1-249-439-11	CARBON 68K 5%	1/4W

Ref. No.	Part No.	Description	Remark
< SWITCH >			
S401	1-554-303-21	SWITCH, TACTILE (CONTINUE)	
S402	1-554-303-21	SWITCH, TACTILE (REPEAT)	
S403	1-554-303-21	SWITCH, TACTILE (II)	
S404	1-554-303-21	SWITCH, TACTILE (DD)	
S405	1-554-303-21	SWITCH, TACTILE (SHUFFLE)	
S406	1-554-303-21	SWITCH, TACTILE (FADER)	
S407	1-554-303-21	SWITCH, TACTILE (D)	
S408	1-554-303-21	SWITCH, TACTILE (III)	
S409	1-554-303-21	SWITCH, TACTILE (PROGRAM)	
S410	1-554-303-21	SWITCH, TACTILE (TIME)	
S411	1-554-303-21	SWITCH, TACTILE (<K)	
S412	1-554-303-21	SWITCH, TACTILE (OPEN/CLOSE)	
S413	1-554-303-21	SWITCH, TACTILE (■)	
S414	1-554-303-21	SWITCH, TACTILE (DD)	
S415	1-554-303-21	SWITCH, TACTILE (EDIT)	
S416	1-554-303-21	SWITCH, TACTILE (TIME SET)	
S417	1-554-303-21	SWITCH, TACTILE (PEAK SERCH)	
S418	1-554-303-21	SWITCH, TACTILE (MUSIC SCAN)	
S419	1-554-303-21	SWITCH, TACTILE (1)	
S420	1-554-303-21	SWITCH, TACTILE (6)	
S421	1-554-303-21	SWITCH, TACTILE (11)	
S423	1-554-303-21	SWITCH, TACTILE (2)	
S424	1-554-303-21	SWITCH, TACTILE (7)	
S425	1-554-303-21	SWITCH, TACTILE (12)	
S427	1-554-303-21	SWITCH, TACTILE (3)	
S428	1-554-303-21	SWITCH, TACTILE (8)	
S431	1-554-303-21	SWITCH, TACTILE (4)	
S432	1-554-303-21	SWITCH, TACTILE (9)	
S435	1-554-303-21	SWITCH, TACTILE (5)	
S436	1-554-303-21	SWITCH, TACTILE (10)	
S439	1-554-303-21	SWITCH, TACTILE (>12)	
S440	1-554-303-21	SWITCH, TACTILE (CHECK)	
S441	1-554-303-21	SWITCH, TACTILE (CLEAR)	
S442	1-554-303-21	SWITCH, TACTILE (A. SPACE/A. CUE)	
< VIBRATOR >			
X401	1-577-358-21	VIBRATOR, CERAMIC (4MHz)	

	1-642-886-21	HP BOARD (M54)	

< CAPACITOR >			
C481	1-162-294-31	CERAMIC 0.001uF	10% 50V (M54)
C482	1-162-294-31	CERAMIC 0.001uF	10% 50V (M54)
C483	1-164-159-11	CERAMIC 0.1uF	50V (M54)

HP

LOADING

MAIN

Ref. No.	Part No.	Description	Remark			
< JACK >						
J481	1-568-519-41	JACK, LARGE TYPE (PHONES) (M54)				
< RESISTOR >						
R481	1-249-402-11	CARBON	56	5%	1/4W (M54)	
R482	1-249-402-11	CARBON	56	5%	1/4W (M54)	

*	1-632-202-11	LOADING BOARD				

< CONNECTOR >						
* CN301	1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P				
< SWITCH >						
S271	1-572-086-11	SWITCH, LEAF (OUT SW)				
S272	1-572-086-11	SWITCH, LEAF (IN SW)				

*	A-4649-105-A	MAIN BOARD, COMPLETE (M54)				
*	A-4649-111-A	MAIN BOARD, COMPLETE (M43)				

	4-902-345-01	HEAT SINK (EXCEPT M54:UK)				
*	4-941-237-01	HEAT SINK (M54:UK)				
< CAPACITOR >						
C205	1-126-163-11	ELECT	4.7uF	20%	50V	
C206	1-126-059-11	ELECT	10uF	20%	50V	
C207	1-126-059-11	ELECT	10uF	20%	50V	
C208	1-124-997-11	ELECT	470uF	20%	10V	
C209	1-124-997-11	ELECT	470uF	20%	10V	
C210	1-126-024-11	ELECT	220uF	20%	16V	
C211	1-124-997-11	ELECT	470uF	20%	10V	
C212	1-164-159-11	CERAMIC	0.1uF		50V	
C213	1-126-012-11	ELECT	470uF	20%	16V	
C214	1-126-012-11	ELECT	470uF	20%	16V	
C301	1-126-022-11	ELECT	47uF	20%	16V	
C302	1-126-301-11	ELECT	1uF	20%	50V	
C305	1-126-022-11	ELECT	47uF	20%	16V	
C306	1-164-159-11	CERAMIC	0.1uF		50V	
C307	1-164-159-11	CERAMIC	0.1uF		50V	
C308	1-164-159-11	CERAMIC	0.1uF		50V	
C311	1-130-491-00	MYLAR	0.047uF	5%	50V	
C312	1-161-374-11	CERAMIC	0.0015uF	20%	50V	
C313	1-161-494-00	CERAMIC	0.022uF		25V	
C314	1-162-306-11	CERAMIC	0.01uF	20%	16V	

Ref. No.	Part No.	Description	Remark			
C315	1-126-300-11	ELECT	0.47uF	20%	50V	
C317	1-164-159-11	CERAMIC	0.1uF		50V	
C318	1-164-159-11	CERAMIC	0.1uF		50V(M43)	
C319	1-162-282-31	CERAMIC	100PF	10%	50V	
C320	1-130-483-00	MYLAR	0.01uF	5%	50V	
C321	1-162-208-31	CERAMIC	24PF	5%	50V	
C322	1-124-994-11	ELECT	100uF	20%	10V	
C324	1-164-159-11	CERAMIC	0.1uF		50V	
C325	1-162-205-31	CERAMIC	18PF	5%	50V	
C326	1-162-205-31	CERAMIC	18PF	5%	50V	
C327	1-164-159-11	CERAMIC	0.1uF		50V	
C328	1-126-024-11	ELECT	220uF	20%	16V	
C329	1-126-024-11	ELECT	220uF	20%	16V	
C330	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C331	1-164-159-11	CERAMIC	0.1uF		50V	
C332	1-164-159-11	CERAMIC	0.1uF		50V	
C333	1-164-159-11	CERAMIC	0.1uF		50V	
C335	1-164-159-11	CERAMIC	0.1uF		50V	
C351	1-126-022-11	ELECT	47uF	20%	16V	
C352	1-164-159-11	CERAMIC	0.1uF		50V	
C353	1-126-022-11	ELECT	47uF	20%	16V	
C354	1-164-159-11	CERAMIC	0.1uF		50V	
C355	1-126-022-11	ELECT	47uF	20%	16V	
C356	1-164-159-11	CERAMIC	0.1uF		50V	
C357	1-124-994-11	ELECT	100uF	20%	10V (M43)	
C357	1-124-997-11	ELECT	470uF	20%	10V (M54)	
C358	1-124-994-11	ELECT	100uF	20%	10V (M43)	
C358	1-124-997-11	ELECT	470uF	20%	10V (M54)	
C361	1-162-280-31	CERAMIC	82PF	10%	50V	
C362	1-162-280-31	CERAMIC	82PF	10%	50V	
C363	1-162-213-31	CERAMIC	39PF	5%	50V	
C364	1-162-213-31	CERAMIC	39PF	5%	50V	
C365	1-162-213-31	CERAMIC	39PF	5%	50V	
C366	1-162-213-31	CERAMIC	39PF	5%	50V	
C367	1-161-494-00	CERAMIC	0.022uF		25V	
C368	1-161-494-00	CERAMIC	0.022uF		25V	
C371	1-106-359-00	MYLAR	4700PF	5%	200V	
C372	1-106-359-00	MYLAR	4700PF	5%	200V	
C373	1-130-472-00	MYLAR	0.0012uF	5%	50V	
C374	1-130-472-00	MYLAR	0.0012uF	5%	50V	
C377	1-126-022-11	ELECT	47uF	20%	16V	
C378	1-126-022-11	ELECT	47uF	20%	16V	
C379	1-106-347-00	MYLAR	1500PF	5%	200V	
C380	1-106-347-00	MYLAR	1500PF	5%	200V	
C392	1-164-159-11	CERAMIC	0.1uF		50V(M43)	
C393	1-164-159-11	CERAMIC	0.1uF		50V(M43)	
C394	1-124-994-11	ELECT	100uF	20%	10V(M43)	

MAIN

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
< CONNECTOR >							
* CN204	1-564-511-11	PLUG, CONNECTOR 8P		Q372	8-729-141-30	TRANSISTOR 2SC3623A-LK	
* CN301	1-568-843-11	SOCKET, CONNECTOR 28P		Q373	8-729-141-30	TRANSISTOR 2SC3623A-LK	
* CN302	1-568-822-11	SOCKET, CONNECTOR 22P		Q374	8-729-141-30	TRANSISTOR 2SC3623A-LK	
* CN381	1-564-708-11	PIN, CONNECTOR (SMALL TYPE) 6P (M54)		Q375	8-729-231-55	TRANSISTOR 2SC2878-AB	
* CN382	1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P (M54)		Q376	8-729-231-55	TRANSISTOR 2SC2878-AB	
* CN391	1-565-561-11	PIN, CONNECTOR 3P (AU BUS) (M43)		Q392	8-729-900-80	TRANSISTOR DTC114ES (M43)	
< DIODE >				< RESISTOR >			
D207	8-719-114-49	DIODE RD7.5JSB2		R204	1-249-425-11	CARBON 4.7K 5% 1/4W	
D208	8-719-109-89	DIODE RD5.6ESB2		R205	1-249-425-11	CARBON 4.7K 5% 1/4W	
D209	8-719-987-63	DIODE 1N4148M		R206	1-249-417-11	CARBON 1K 5% 1/4W	
D328	8-719-987-63	DIODE 1N4148M		R207	1-249-417-11	CARBON 1K 5% 1/4W	
D344	8-719-987-63	DIODE 1N4148M		R208	1-249-423-11	CARBON 3.3K 5% 1/4W	
D391	8-719-987-63	DIODE 1N4148M (M43)		R209	1-249-413-11	CARBON 470 5% 1/4W	
< IC >				R210	1-249-429-11	CARBON 10K 5% 1/4W (M54)	
IC202	8-759-630-21	IC M5290P-16		R211	1-249-410-11	CARBON 270 5% 1/4W (M54)	
IC203	8-759-945-58	IC RC4558P (M54)		R214	1-249-417-11	CARBON 1K 5% 1/4W	
IC301	8-752-337-26	IC CXD2500AQ		R301	1-249-417-11	CARBON 1K 5% 1/4W	
IC302	8-752-342-65	IC CXD2560M		R302	1-249-417-11	CARBON 1K 5% 1/4W	
IC303	8-752-349-01	IC CXD2561AM		R303	1-249-421-11	CARBON 2.2K 5% 1/4W	
IC306	8-759-503-91	IC TL082ACP (M54)		R304	1-249-417-11	CARBON 1K 5% 1/4W	
IC306	8-759-945-58	IC RC4558P (M43)		R306	1-249-413-11	CARBON 470 5% 1/4W	
IC307	8-759-945-58	IC RC4558P		R309	1-249-405-11	CARBON 100 5% 1/4W	
< JACK >				R311	1-249-423-11	CARBON 3.3K 5% 1/4W	
J381	1-569-442-11	JACK, PIN 2P (LINE OUT) (M43)		R312	1-249-429-11	CARBON 10K 5% 1/4W	
* J381	1-569-443-11	JACK, PIN 4P (LINE OUT) (M54)		R313	1-249-423-11	CARBON 3.3K 5% 1/4W	
< COIL >				R314	1-249-429-11	CARBON 10K 5% 1/4W	
L301	1-408-403-00	INDUCTOR 3.3uH		R315	1-249-417-11	CARBON 1K 5% 1/4W	
L321	1-408-403-00	INDUCTOR 3.3uH		R316	1-249-417-11	CARBON 1K 5% 1/4W	
< TRANSISTOR >				R317	1-249-419-11	CARBON 1.5K 5% 1/4W	
Q202	8-729-140-96	TRANSISTOR 2SD774-34		R318	1-249-441-11	CARBON 100K 5% 1/4W	
Q203	8-729-141-83	TRANSISTOR 2SB1094-LK		R319	1-247-903-00	CARBON 1M 5% 1/4W	
Q204	8-729-900-65	TRANSISTOR DTA144ES		R320	1-249-417-11	CARBON 1K 5% 1/4W	
Q205	8-729-900-89	TRANSISTOR DTC144ES		R321	1-249-417-11	CARBON 1K 5% 1/4W	
Q206	8-729-900-89	TRANSISTOR DTC144ES		R322	1-249-417-11	CARBON 1K 5% 1/4W	
Q207	8-729-230-45	TRANSISTOR 2SC2458-YGR		R323	1-249-417-11	CARBON 1K 5% 1/4W	
Q208	8-729-141-83	TRANSISTOR 2SB1094-LK		R324	1-249-417-11	CARBON 1K 5% 1/4W	
Q209	8-729-281-52	TRANSISTOR 2SC1815-Y (M54)		R325	1-249-417-11	CARBON 1K 5% 1/4W	
Q341	8-729-900-65	TRANSISTOR DTA144ES		R326	1-249-417-11	CARBON 1K 5% 1/4W	
Q342	8-729-900-65	TRANSISTOR DTA144ES		R327	1-247-903-00	CARBON 1M 5% 1/4W	
Q343	8-729-900-65	TRANSISTOR DTA144ES		R328	1-247-895-00	CARBON 470K 5% 1/4W	
Q344	8-729-900-89	TRANSISTOR DTC144ES		R330	1-249-417-11	CARBON 1K 5% 1/4W (M43)	
Q371	8-729-141-30	TRANSISTOR 2SC3623A-LK		R343	1-249-441-11	CARBON 100K 5% 1/4W	
				R344	1-249-441-11	CARBON 100K 5% 1/4W	
				R345	1-249-425-11	CARBON 4.7K 5% 1/4W	
				R346	1-249-425-11	CARBON 4.7K 5% 1/4W	
				R347	1-249-441-11	CARBON 100K 5% 1/4W	
				R351	1-249-436-11	CARBON 39K 5% 1/4W	

MAIN	MOTOR VOL
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Ref.No.	Part No.	Description	Remark		
R352	1-249-436-11	CARBON	39K	5%	1/4W
R353	1-249-436-11	CARBON	39K	5%	1/4W
R354	1-249-436-11	CARBON	39K	5%	1/4W
R355	1-249-436-11	CARBON	39K	5%	1/4W
R356	1-249-436-11	CARBON	39K	5%	1/4W
R357	1-249-436-11	CARBON	39K	5%	1/4W
R358	1-249-436-11	CARBON	39K	5%	1/4W
R361	1-249-431-11	CARBON	15K	5%	1/4W (M54)
R361	1-249-432-11	CARBON	18K	5%	1/4W (M43)
R362	1-249-431-11	CARBON	15K	5%	1/4W (M54)
R362	1-249-432-11	CARBON	18K	5%	1/4W (M43)
R363	1-249-431-11	CARBON	15K	5%	1/4W (M54)
R363	1-249-432-11	CARBON	18K	5%	1/4W (M43)
R364	1-249-431-11	CARBON	15K	5%	1/4W (M54)
R364	1-249-432-11	CARBON	18K	5%	1/4W (M43)
R365	1-249-438-11	CARBON	56K	5%	1/4W
R366	1-249-438-11	CARBON	56K	5%	1/4W
R367	1-249-438-11	CARBON	56K	5%	1/4W
R368	1-249-438-11	CARBON	56K	5%	1/4W
R369	1-249-419-11	CARBON	1.5K	5%	1/4W
R370	1-249-419-11	CARBON	1.5K	5%	1/4W
R371	1-249-419-11	CARBON	1.5K	5%	1/4W
R372	1-249-419-11	CARBON	1.5K	5%	1/4W
R373	1-247-887-00	CARBON	220K	5%	1/4W
R374	1-247-887-00	CARBON	220K	5%	1/4W
R375	1-249-409-11	CARBON	220	5%	1/4W
R376	1-249-409-11	CARBON	220	5%	1/4W
R377	1-249-409-11	CARBON	220	5%	1/4W
R378	1-249-409-11	CARBON	220	5%	1/4W
R379	1-249-425-11	CARBON	4.7K	5%	1/4W
R380	1-249-425-11	CARBON	4.7K	5%	1/4W
R381	1-249-425-11	CARBON	4.7K	5%	1/4W
R382	1-249-425-11	CARBON	4.7K	5%	1/4W
R383	1-249-413-11	CARBON	470	5%	1/4W
R384	1-249-413-11	CARBON	470	5%	1/4W
R385	1-249-393-11	CARBON	10	5%	1/4W
R386	1-249-393-11	CARBON	10	5%	1/4W
R388	1-249-393-11	CARBON	10	5%	1/4W (M43)
R389	1-249-413-11	CARBON	470	5%	1/4W (M54)
R390	1-249-413-11	CARBON	470	5%	1/4W (M54)
R395	1-249-429-11	CARBON	10K	5%	1/4W (M43)
R396	1-247-848-11	CARBON	5.1K	5%	1/4W
R397	1-247-848-11	CARBON	5.1K	5%	1/4W
R398	1-247-848-11	CARBON	5.1K	5%	1/4W
R399	1-247-848-11	CARBON	5.1K	5%	1/4W

Ref. No.	Part No.	Description	Remark		
< VIBRATOR >					
X327	1-579-314-11	VIBRATOR, CRYSTAL (22.5792MHz)			

*	A-4649-107-A	MOTOR VOL BOARD, COMPLETE (M54)	*****		
*	4-922-980-01	HOLDER (LED) (M54)			
< CAPACITOR >					
C451	1-124-443-00	ELECT	100uF	20%	10V(M54)
C452	1-124-443-00	ELECT	100uF	20%	10V(M54)
C471	1-124-443-00	ELECT	100uF	20%	10V(M54)
C472	1-124-768-11	ELECT	4.7uF	20%	50V(M54)
C473	1-164-159-11	CERAMIC	0.1uF		50V(M54)
< CONNECTOR >					
* CN451	1-564-708-11	PIN, CONNECTOR (SMALL TYPE) 6P (M54)			
* CN453	1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P (M54)			
CN472	1-506-468-11	CONNECTOR 3P, MALE (M54)			
< DIODE >					
D471	8-719-970-49	DIODE BR4361F	(LINE OUT PHONE LEVEL) (M54)		
< IC >					
IC451	8-759-981-89	IC RC4556S (M54)			
IC471	8-759-962-08	IC BA6208 (M54)			
< RESISTOR >					
R451	1-249-435-11	CARBON	33K	5%	1/4W (M54)
R452	1-249-435-11	CARBON	33K	5%	1/4W (M54)
R453	1-249-432-11	CARBON	18K	5%	1/4W (M54)
R454	1-249-432-11	CARBON	18K	5%	1/4W (M54)
R455	1-249-422-11	CARBON	2.7K	5%	1/4W (M54)
R456	1-249-422-11	CARBON	2.7K	5%	1/4W (M54)
R457	1-249-429-11	CARBON	10K	5%	1/4W (M54)
R458	1-249-429-11	CARBON	10K	5%	1/4W (M54)
R461	1-249-399-11	CARBON	33	5%	1/4W (M54)
R462	1-249-399-11	CARBON	33	5%	1/4W (M54)
R471	1-249-411-11	CARBON	330	5%	1/4W (M54)
R472	1-249-417-11	CARBON	1K	5%	1/4W (M54)
R473	1-249-417-11	CARBON	1K	5%	1/4W (M54)
< VARIABLE RESISTOR >					
RV451	1-241-810-11	RES, VAR, CARBON 10K/10K	(LINE OUT PHONE LEVEL) (M54)		

P. SW	POWER
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Ref.No.	Part No.	Description	Remark
*	1-642-887-21	P. SW BOARD *****	
		< SWITCH >	
S491	1-554-118-00	SWITCH, PUSH (1 KEY) (POWER)	

*	1-642-883-21	POWER BOARD *****	
		< CAPACITOR >	
C201	1-124-572-11	ELECT 100uF 20% 63V	
C202	1-126-059-11	ELECT 10uF 20% 50V	
C203	1-124-556-11	ELECT 2200uF 20% 16V	
C204	1-126-937-11	ELECT 4700uF 20% 16V	
C221	1-164-159-11	CERAMIC 0.1uF 50V	
		< CONNECTOR >	
* CN201	1-564-511-11	PLUG, CONNECTOR 8P	
* CN203	1-580-230-11	PIN, CONNECTOR (PC BOARD) 3P	
		< DIODE >	
D201	8-719-200-02	DIODE 10E2 (M43:E, Saudi Arabia, Malaysia)	
D201	8-719-200-82	DIODE 11ES2 (M43:EXCEPT E, Saudi Arabia, Malaysia, M54)	
D202	8-719-110-03	DIODE RD7.5ES-B2	
D203	8-719-200-02	DIODE 10E2 (M43:E, Saudi Arabia, Malaysia)	
D203	8-719-200-82	DIODE 11ES2 (M43:EXCEPT E, Saudi Arabia, Malaysia, M54)	
D204	8-719-200-02	DIODE 10E2 (M43:E, Saudi Arabia, Malaysia)	
D204	8-719-200-82	DIODE 11ES2 (M43:EXCEPT E, Saudi Arabia, Malaysia, M54)	
D205	8-719-200-02	DIODE 10E2 (M43:E, Saudi Arabia, Malaysia)	
D205	8-719-200-82	DIODE 11ES2 (M43:EXCEPT E, Saudi Arabia, Malaysia, M54)	
D206	8-719-200-02	DIODE 10E2 (M43:E, Saudi Arabia, Malaysia)	
D206	8-719-200-82	DIODE 11ES2 (M43:EXCEPT E, Saudi Arabia, Malaysia, M54)	
		< IC >	
IC201	8-759-633-42	IC M5293L	

Ref.No.	Part No.	Description	Remark
		< TRANSISTOR >	
Q201	8-729-119-76	TRANSISTOR 2SA1175-HFE	
		< RESISTOR >	
R201	1-249-435-11	CARBON 33K 5% 1/4W	
R202	1-249-438-11	CARBON 56K 5% 1/4W	
R203	1-249-429-11	CARBON 10K 5% 1/4W	
		< SWITCH >	
△S201	1-571-722-11	SWITCH, VOLTAGE SELECTION (E, Saudi Arabia, Malaysia)	

		MISCELLANEOUS *****	
△23	1-558-946-21	CORD, POWER (M54:UK)	
△23	1-574-358-31	CORD, POWER (WITH CONNECTOR) (Australian)	
△23	1-575-651-21	CORD, POWER (AEP, East European, Italian, Saudi Arabia, Malaysia)	
△23	1-575-653-21	CORD, POWER (E)	
△23	1-590-379-11	CORD, POWER (M43:UK)	
28	1-575-160-11	WIRE, FLAT TYPE (22 CORE)	
△32	1-569-007-11	ADAPTER, CONVERSION 2P (E)	
△32	1-569-008-11	ADAPTER, CONVERSION 2P (Saudi Arabia)	
* 110	1-452-538-11	MAGNET	
156	1-575-001-11	WIRE, FLAT TYPE (12 CORE)	
△157	8-848-144-11	DEVICE, OPTICAL KSS-240A	
D471	8-719-970-49	DIODE BR4361F (M54)	
M101	X-4917-523-3	BASE (OUTSERT) ASSY	
M102	X-4917-504-1	MOTOR ASSY	
M191	A-4604-363-A	MOTOR (L) ASSY	
△T901	1-449-922-11	TRANSFORMER, POWER (EXCEPT E, Saudi Arabia, Malaysia)	
△T901	1-449-923-11	TRANSFORMER, POWER (E, Saudi Arabia, Malaysia)	

Ref. No.	Part No.	Description	Remark
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ACCESSORIES & PACKING MATERIALS

1-465-867-11 REMOTE COMMANDER (RM-D597) (M54)
 1-558-271-11 CORD, CONNECTION (MADE IN FRANCE)
 1-559-533-11 CORD, CONNECTION (MADE IN JAPAN)
 2-181-754-01 COVER, BATTERY (M54)
 3-754-665-11 MANUAL, INSTRUCTION (English/French
 Spanish/Portuguese) (M54:AEP, E, UK)
 3-754-665-41 MANUAL, INSTRUCTION (Dutch/German
 Italian/Swedish) (M54:AEP)

* 4-922-998-01 CUSHION (MADE IN JAPAN)
 * 4-927-355-03 CUSHION (MADE IN FRANCE)

* 4-941-548-01 LABEL, CLASS1
 * 4-948-882-31 INDIVIDUAL CARTON
 (MADE IN FRANCE
 M43:AEP, East European, Italian, UK)

* 4-948-882-41 INDIVIDUAL CARTON
 (MADE IN FRANCE M54:AEP, UK)
 * 4-949-971-21 INDIVIDUAL CARTON
 (MADE IN JAPAN
 M43:AEP, East European, Australian)

* 4-949-971-41 INDIVIDUAL CARTON
 (MADE IN JAPAN M54:E, AEP)
 * 4-949-971-61 INDIVIDUAL CARTON
 (MADE IN JAPAN M43:E, Malaysia)

HARDWARE LIST

17-682-548-09 SCREW +BVT 3X8 (S)
 # 27-682-547-09 SCREW +B 3X6
 # 37-682-547-04 SCREW +BVT 3X6 (S)
 # 47-685-646-79 SCREW +BVT 3X8 TYPE2 N-S
 # 57-621-255-15 SCREW +P 2X3
 # 67-685-134-19 SCREW +BTP 2.6X8 TYPE2 N-S
 # 77-621-775-10 SCREW +B 2.6X4